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ABSTRACT

The conference papers included in this collection address issues of concern to literacy development in the community college. "Functional Literacy and Persistence in the Community College," by Dorothy M. Knoell, raises questions about student persistence in the absence of requisite skills. "Training Perspective on Functional Literacy--Vocational-Occupational," by Sister Anne Joachim Moore, considers several topics pertaining to competency-based approaches to job training. Arthur M. Cohen's article, "Functional Literacy in Transfer Programs," gives particular emphasis to minority students. Next, Janice R. Kennedy examines "Technical/Occupational Training in the Community College" in terms of students' and the public's demands. "Functional Literacy as Related to Licensure of Health Professionals," by Betty Fowler Thompson, discusses the problems associated with the deficient reading skills of many associate degree nursing students. Pepe Barron's article, "Bilingual Education at the Community College and Functional Literacy," presents research needs and questions to be considered in several areas related to bilingual education. Next, M. J. Fujimoto provides "A Look at Counseling and Guidance in Promoting Basic Skills Instruction in the Community Colleges," and Richard E. Schutz proposes a plan for community college research and development investments in functional literacy. Finally, "Mathematics" by A. R. Trujillo defines minimum mathematical competency and assesses the community college role with regard to mathematical literacy. (AYC)

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Conference on Functional Literacy
in the Community College Setting

A Conference organized in cooperation with
El Congreso Nacional de Asuntos Colegiales

and hosted by

SWRL Educational Research and Development

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INTRODUCTION

The National Institute of Education recognizes that issues surrounding literacy are crucial, including those involving a growing number of persons in educational processes at the postsecondary level. In recent years, it has come to be recognized that a significant part of the community college mission must be to provide the highest potential level of functional literacy for every client. Research on functional literacy exists at some levels of education, but the literature shows a paucity of results at the postsecondary level. In keeping with its research efforts in other areas, the National Institute of Education has initiated a series of activities to contribute to a research and development agenda on functional literacy at the community college level and to focus the attention of concerned educators, scholars, scientists, and writers on the subject.

The first activity planned by the Institute was a conference held in July, 1978, where educators and researchers discussed functional literacy in the community college setting and research implications for this vital social issue. Titled *Functional Literacy in the Community College Setting,* the conference was organized in cooperation with El Congreso Nacional de Asuntos Colegiales (CONAC) and hosted by SWRL Educational Research and Development, Los Alamitos, California. Over 75 educators and researchers from colleges and concerned agencies attended the three-day conference. They heard paper presentations and discussed the topics around which the conference was organized. The issues of concern to literacy development in the community colleges include:

Basic Skills

Vocational and Occupational Skills

Transfer Programs

Technical Training and Licensing

Bilingual Education

Admission and Retention

Role of Counseling and Guidance

Research and Development

Mathematics

This document compiles the papers that were presented during the July conference. Following is a list of paper titles and authorship.

CONFERENCE PAPERS

Functional Literacy and Persistence in the Community Colleges by Dorothy M. Knoell

Training Perspective on Functional Literacy—Vocational-Occupational by Sister Anne Joachim Moore

Functional Literacy in Transfer Programs by Arthur M. Cohen

Technical/Occupational Training in the Community College by Janice R. Kennedy

Functional Literacy as Related to Licensure of Health Professionals by Betty Fowler Thompson

Bilingual Education at the Community College and Functional Literacy by Pepe Barron

A Look at Counseling and Guidance in Promoting Basic Skills Instruction in the Community Colleges by M. J. Fujimoto

Community Colleges, Educational Research and Development, and Functional Literacy by Richard E. Schutz

Mathematics by A. R. Trujillo

FUNCTIONAL LITERACY AND PERSISTENCE IN THE COMMUNITY COLLEGES

Dorothy M. Knoell
California Postsecondary Education Commission

THE COMMUNITY COLLEGE SETTING

The community colleges appear to have reached an apex in the mid-1970s with respect to their responsiveness to the needs of new constituencies, the openness of their admission and retention policies, and their overall flexibility. The 18-year-old, fulltime, daytime student with a degree or transfer objective became the new "minority" on campus. Programs of lifelong learning for adults emerged as the dominant function, at least in the California Community colleges. Nonpunitive policies governed grading, and remedial programs were replaced by new approaches to developing functional literacy which were more palatable to the increasing numbers of disadvantaged students who enrolled with inadequate preparation for college work.

Community colleges are now being confronted with a variety of problems and forces which appear likely to reverse earlier trends. First, they are having to cope with a reduction in financial resources at a time when the supply of young, full-time students is declining and the competition for them will increase. Changes in birth rates are producing a different

racial/ethnic mix in the general population, and are likely to produce a student body in the community colleges which is poorer and in other ways more disadvantaged than in the past. The "back to basics" movement which is occurring at all levels of education in the late 1970s will have a double impact on the community colleges, as high schools refuse to grant diplomas to students who have not been able to demonstrate minimum competencies, and as baccalaureate institutions question the competencies of the transfer students.

Current issues related to functional literacy in the community colleges may be more easily understood from an historical perspective. In the beginning, community colleges gained respectability by helping the "almost prepared" young men and women who, as first-year students, had poor prospects for success in four-year institutions. Community colleges provided remediation in the basic skills for these students, while helping them improve their self-concept before transferring into baccalaureate programs.

Success with the "almost prepared" was followed by community college programs to help the disadvantaged who were not at all prepared for college-level work. The disadvantaged were for the most part from racial/ethnic minority groups, low-income families, and high schools with a poor record of preparing students for college (or anything else). Recognizing the disadvantaged students' need for a great deal of help before they could participate in regular programs, many community colleges made what now appear to be serious mistakes in organizing remedial efforts. At first, they developed greatly lengthened remedial programs (now to be called "developmental"),

which kept the disadvantaged who persisted out of the mainstream of regular college work for two full years. The assumption was made that two years of remediation for the disadvantaged would be as effective as one year for the "almost prepared." Other community colleges offered special Educational Opportunity Programs for the disadvantaged, often as an alternative means to achieve remediation. The special programs and services ususally included ethnic studies courses, peer tutoring, work experience, and other activities which also tended to keep students out of the mainstream of college studies until they were judged to be ready for competition with regular students. The effect was often similar to that of the lengthened remedial programs -- frustration leading to attrition, not necessarily accompanied by academic failure.

A new thrust for the community colleges has been lifelong learning programs for adults, who are the most heterogeneous of the several college constituencies. Little is known about their functional literacy and little effort is made to assess or remediate, except when students request such help. Their prior education ranges from less-than-high school to graduation from college with a bachelor's or higher degree. Some are highly motivated to participate in classes with regular college students; others enroll as a kind of "auditor", to get "exposure" to college courses. Most objectives which can be achieved in a semester or less, while a minority returns to college repeatedly to pursue new interests from endless lists of courses which are available to them.

Most recently, as a result of new federal and state regulations community colleges are undertaking affirmative action programs with the goal of enrolling students with all kinds of disabilities which may affect their functional literacy, including the hearing-impaired, those with learning disabilities, even the mentally retarded. Although their need for special services is great, the goal the colleges are urged to pursue is that of full integration of students with such disabilities into regular classes and programs.

Finally, the community colleges appear to have little choice with respect to becoming a part of the vast movement in all of education to ensure that students have learned to read and write at appropriate levels, to test for and to certify these competencies, and to inflict a kind of academic punishment on those who do not measure up. There is a new threat that access to higher levels of education will be blocked if students cannot demonstrate their mastery of basic skills. The high school diploma is to be withheld, thus posing problems of access to the community colleges. The associate degree may be withheld by the community college if students are unable to demonstrate mastery at graduation. Students may still transfer to baccalaureate institutions on the basis of their community college record but their enrollment in upper division programs may be blocked if they are unable to demonstrate, once again, their ability to write at what is judged to be a satisfactory level.

DEFINITION OF FUNCTIONAL LITERACY

For this paper, functional literacy is defined as the possession of reading, writing, and computational skills which are adequate for performance in community college courses and programs at a level satisfactory to the institution, in terms of its academic standards, and to the individual student, in terms of his/her self-concept and expectations. Speaking, listening, and reasoning skills are omitted from the definitions, although their importance to academic success is acknowledged. The definition allows for variation among courses, programs, and colleges, and secondarily, among individuals. From the point of view of the college, functional literacy may involve some minimum standard applicable to all students when they first enroll (or at the time of admission, counseling, and placement), as they progress through a program, at the time of graduation, and, for some, when they transfer. At some stages, minimum competencies are assessed by use of standardized tests.

The possession of functional literacy may also be inferred from course grades and progress in programs leading to degrees and certificates. In other words, students who receive satisfactory grades in some program of credit courses, with some minimum number of withdrawals and no-credit entries, are assumed to have achieved functional literacy for the college in which they are enrolled. Finally, the college may specify levels above the minimum, common levels of competencies, which are prerequisite to and necessary for selected programs and courses; for example, skills needed, a transfer program for the state university, or a course in technical writing.

The term "persistence" is used in the paper, rather than "retention," on the grounds that the student's action in continuing to enroll (to persist) is more relevant to the literacy problem than the college's decision to "retain" the student under present conditions of nonpunitive policies of grading.

The community college student's self-concept is also important in relating functional literacy to persistence. Some students may see themselves as competent in communication skills and resent the tests which classify them as less-than-competent and the remedial/developmental programs into which they are counseled. Many have a self-concept as incurable incompetents in the area of mathematics, for example, as a result of some combination of experience and cultural conditioning. Some may indeed be functionally literate in terms of their ability to persist in college without special help, because of "coping" skills they learned along the way to the community college or a very high level of motivation to succeed, or both. On the other hand, some students with demonstrated competencies in basic skills may not persist in the community college because of a self-concept which says that they are capable of much better performance than they have achieved on tests and in courses. Thus, the student's self-concept may well affect his/her ability to succeed and persist in college, in relation to his/her achievement of functional literacy.

HOW BIG IS THE PROBLEM?

The literature of higher education pays scant attention to the concept of functional literacy. Instead, students are viewed as disadvantaged or

deficient in basic skills on the basis of national norms on ability and achievement tests administered to high school seniors and college freshmen. There is little in the research on college students on which one might base an estimate of the incidence of the functionally illiterate in the community colleges and its relationship to persistence. However, some proxies are available which are indicative of the scope of the problem of illiteracy. For example, researchers in the National Assessment of Education Program estimate that nearly one-half of the 17 year-olds cannot read freshman college material. More startling still is the conclusion by the U.S. Department of Health, Education, and Welfare that about a million teenagers between the ages of 12 and 17 cannot read at the beginning fourth-grade level.

College and university judgments concerning the percentages of their students who are functionally illiterate vary in accordance with both their selectivity at the time of admission and their "standards." For example, each of the systems of public higher education in California estimates that between 40 and 60 percent of its incoming freshmen need "remedial" writing programs although the students would probably earn scores in quite different ranges of the distribution if they had been given a common placement test.

The problem of illiteracy in mathematics is more difficult to quantify since there is a lack of consensus about the minimum competencies which all college students should possess. Many students do not receive mathematics instruction after junior high school. The rate of forgetting is high.

However, some students persist in college with little need for mathematics skills by choosing courses in which they are not needed.

Many community colleges include people without high school diplomas among their constitutents. While we do not know the percentage of functionally illiterate among those without diplomas, the gross numbers are impressive. According to census reports, there are 53.3 million persons in the United States who are 16 years of age or older, not enrolled in school, and without a high school diploma.

Furthermore, in 1973, 800,000 youngsters left high school before receiving a diploma. There are many reasons to think that the number of non-graduates from high school will remain high under conditions of a declining birth rate, or increase in the next decade.

On the one hand, the decline in the birth rate is occurring in families whose children are most likely to complete high school and enter college. This decline is occurring at a time when the birth rate appears to be increasing for minority groups with lower rates of high school completion and college attendance. At about the same time, new requirements for promotion and graduation from high school are being established, based on minimum competencies in the basic skills, which appear likely to create a new class of non-high school gratuates. Some will be denied the traditional diploma because they are unable to demonstrate basic competencies, while others will be noncompleters who leave high school when it becomes apparent that they will not qualify for a diploma certifying graduation. An issue

still to be resolved is the responsibility of the community colleges for providing these nongraduates with a "second chance" to become functionally literate and otherwise certified as educated.

ISSUES RELATED TO LITERACY AND PERSISTENCE

Research in the community colleges which relates functional literacy to persistence is by no means conclusive. Institutional studies tend to show that remedial/developmental programs to raise the level of basic skills of entering students (a) increase skill levels, (b) result in better course grades, compared with control groups not receiving remediation, and (c) improve students' self-concepts. However, there is little research to show the extent to which nonpersistence or poor grades, or both, in the community college can be attributed to functional illiteracy. Any statistical relationships which might be found need to be interpreted in the context of the philosophic debate taking place in the community colleges about issues relating to institutional vs. individual goals, objectives, and expectations.

PERSISTENCE WITHOUT ILLITERACY

At the present time, community colleges are for the most part committed to an open-door admissions policy for high school graduates and others who are judged to be able to profit from the instruction offered. Their strong commitment to affirmative action for racial/ethnic minorities and other disadvantaged students makes it unlikely that they will adopt restrictive admissions policies for high school graduates. High school graduation is not a guarantee of functional literacy as defined in this paper, however.

Some of the issues and dilemmas besetting the community colleges in this context of affirmative action in relation to a new insistence on academic standards will be set forth as questions.

Some community college students persist and perform satisfactorily in credit classes and programs although they have been inadequately prepared in high school in the basic skills of reading and writing. Some are able to survive in an academic environment by utilizing compensatory "coping" skills they acquired earlier as disadvantaged minorities. Others compensate for inadequate skills with above-average motivation and hard work. Still others are able to avoid classes or courses which make heavy demands on reading and writing skills, and by withdrawing from classes with which they are unable to cope. The following questions need to be addressed in resolving the issue of student persistence in the absence of requisite skills:

- Should students with skill deficiencies be allowed to enroll in regular classes in the various disciplines and occupational fields before they have acquired the minimum levels of basic skills which the college regards as necessary for college-level work?

- If so, should students whose grade-point average is "C," or better, be stopped at some point in the curriculum if they are unable or unwilling to do whatever is necessary to reach these minimum skill levels?

- If restrictions are placed on the enrollment of students with deficiencies, should the college offer a full program of "developmental" courses to be taken in the freshman year, that is, courses in sociology, psychology, natural science?

- Should students be allowed to graduate without demonstrating mastery of basic skills? Should they be able to transfer to baccalaureate institutions without doing so, if their grade-point average is satisfactory?

- In summary, should student enrollment in courses for degree credit and retention to graduation be contingent upon demonstration of levels of basic skills established by the college as necessary and desirable?

THE PROBLEM OF RELEVANCE

Many community college courses and some programs do not require a great deal of reading and writing, for example, the performing arts, auto mechanics, tailoring, and tennis. Many more require no mathematics skills. Furthermore, an increasing proportion of the students enroll with limited, short-term objectives which they can achieve while deficient in one or more of the basic skills. Questions to be addressed are the following:

- Should community colleges establish some minimum literacy requirement to be met by all students as a condition of enrollment, regardless of their objectives or choice of courses?

- Should higher levels of basic skills be established by the college as prerequisites for courses and programs in which skills above the minimum competency level are necessary?

- Should course descriptions in catalogs contain information about the reading level of the textbook and other materials used in the course? Should some courses and programs be exempt from all minimum competency requirements?

FACULTY COMPETENCIES

Faculty members themselves may not possess the levels of basic skills which their students are now required to demonstrate, e.g., part-time instructors in certain vocational fields and some in liberal arts fields who are recent college graduates. Others may simply not agree that all students, in all types of curricula and with varying objectives, should be required to demonstrate functional literacy. Such faculty may not give reading and writing assignments in their courses, or may not require students to write grammatically. We might then ask:

- How can community colleges make functional literacy an all-college program, that is, an expectation and a goal for faculty and staff in all departments? For all courses?

- What should community colleges do to help faculty in all departments acquire the teaching skills which are necessary to help students who are trying to become literate? How can faculty serve as role models with respect to basic skills?

- Is it reasonable to expect faculty and staff to have levels of skills at least as high as those required of their students? If they are deficient, what should be the role of the college in helping them acquire these skills?

- How can we help faculty and staff become sensitive to the needs of students who are not reading and writing at levels expected of traditional students when they first enroll?

ENGLISH AS A SECOND LANGUAGE

Some educationally disadvantaged students lack functional literacy when they enroll in the community college because their parents were not literate in any language. Migrant farm workers provide an example. Others with language problems have parents who were literate in a language other than English, such as immigrants from Vietnam, Cuba, and the Far East.

- Should special programs be established to help students whose problems with basic skills are the result of English being a foreign language for them?

- Should some credit-bearing courses be offered in a foreign language, such as sociology in Spanish, if a sufficient number of Spanish-speaking students are enrolled in the college?

- To what extent can reliance be placed on peer tutoring to help students whose primary language is not English?

LITERACY VS. ACCOMMODATION

The philosophy of the community colleges has long been one of accommodating and adjusting to the changing needs, interests, and abilities of their changing student constituencies. Adjustments have been made in college expectations of what the new students are able and aspire to achieve, as well as in curriculum and materials. As transfer students were replaced by students preparing for immediate employment and adults with idiosyncratic objectives, there was less emphasis on the attainment of reading and writing skills at levels expected of traditional college students. Some questions which need to be addressed are the following:

- How far should the community college go in choosing textbooks and other instructional materials which are written for readers with less than twelfth grade skills? Should any floor be established, for example, sixth or ninth grade reading levels, below which texts would not be selected?

- Should community colleges use nonprint media to a greater extent to accommodate students with inadequate reading skills? Should faculty be encouraged to experiment with alternative teaching/learning styles for nonreaders?

- Should community colleges adjust methods and materials to suit the needs of some of their newest constituencies: students with learning disabilities? Impaired hearing or vision? The mentally retarded?

CONCLUSION

Persistence in the community college is not highly related to functional literacy, as defined in this paper, and the relationship is not necessarily linear. Some students have persisted without acquiring the skills regarded as essential for success in college. Some who have persisted have also performed satisfactorily in credit classes because of special "coping" skills, high motivation, and wise choice of courses, curriculum, and college. Others have persisted without achieving, under nonpunitive policies related to grading and retention. At the same time, some students with adequate skills have dropped out because their performance was below their expectations; in other words, their concept of themselves as college students was incompatible with their performance. Others, particularly racial/ethnic minorities and other disadvantaged students, have dropped out when they were unable to acquire needed competencies in time (or could not cope with college in the absence of such skills).

At the present time, community colleges are interested in finding ways to increase retention, while feeling pressure from other levels of education to do something about the problem of enrolled students who cannot read and write. Efforts are being made to increase the functional literacy of high school graduates by providing special help to those who do not pass competency tests and denying the diploma to those who continue to fail after being helped. The community colleges will surely benefit from such efforts as they confront philosophical issues relating to institutional standards and expectations versus student goals and aspirations.

RECOMMENDATIONS FOR STUDY

1. How can functional literacy be defined for purposes of community college research by different individuals, in different settings?

2. What is the relationship between functional literacy and persistence in the community colleges, in terms of
   a. all students in all courses and programs?
   b. students in different curricula and fields of study?
   c. students with differing goals and objectives?

3. What is the role of counseling in attaining a better match between student aptitudes and objectives and community college offerings?

4. How can/should the teaching of basic skills be tailored to differing cognitive styles?

5. Should non-English-speaking students from different countries be accommodated in the same classes? Students from different Spanish-speaking countries? Students from countries where different languages are spoken?

6. Is there any best order in which communication skills can be taught to adults (reading, writing, listening, speaking)?

7. How can staff development for the teaching of functional literacy be organized?

SUGGESTED READINGS

Bergman, Irwin, "A Five-Year Follow-up Study of Entering Fall 1970 Basic Skills Students at Queensborough Community College." Queensborough Community College, Bayside, New York, May 1976. 22 pp. (ED 143 385, JC 770 409)

Donovan, Richard A., et al. "National Project II: Alternatives to the Revolving Door." Fund for the Improvement of Postsecondary Education, Washington, D. C. August 1975. 56 pp. (ED 126 996, JC 760 449)

Mateo, Maria Luisa, et al. "Multivariate Analysis of Bilingual Vocational Education." Research Report 77-07. Wilmington, California, Los Angeles Harbor College, 1977. (ED 148 426, JC 780 045)

Knoell, Dorothy M. "Through the Open Door: A Study of Patterns of Enrollment and Performance in California's Community Colleges." Sacramento: California Postsecondary Education Commission, 1976. 53 pp.

TRAINING PERSPECTIVE ON FUNCTIONAL LITERACY - VOCATIONAL-OCCUPATIONAL

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The Rev. Jesse Jackson appeared on TV's 60 Minutes a few weeks ago calling for a new approach to teaching black students. He thundered that the struggle to excel now requires of the blacks a massive revolution of attitudes; to be a champion one must want to be a champion. "Beauty," Jackson said, "is not enough; the need is for willpower and discipline." These words are familiar, of course, to a much older generation. His words are not merely reactionary or old fashioned, they are practical for society as well as for blacks, or any other minority group. He emphasized that it costs more, much more, to keep people ignorant and underemployed than it does to educate them. A year of incarceration is many times more costly just in dollars than is a year of education. He went on to castigate teachers whose low expectations of the "underprivileged" foredoomed the students to failure to learn, and as well, I would add, foredoomed the teachers to fail to teach. He called for mobilization of resources within the community, teachers, parents, ministers to create that which Roueche has called for, systematic design of the total learning environment.

It appears evident that some <u>functional</u> literacy and that a minimum level of basic skills of some sort are essential for every job performance. To be successful on the job can be taken to mean that the person does a job well enough that the employer is satisfied to retain the worker on the job. Beyond

that minimum ought to be added that the person achieves sufficient satisfaction from doing the job that he or she willingly goes to work each day; maintains and improves job performance sufficiently at least to have the option of being considered for promotions or job changes. There is no presently known way to test for or to train for rising abilities, for now the concern is with identifying the variables critical for one simply to get into the field.

On the matter of course content relevancy, Roueche stresses that the nontraditional student needs to see that he is getting closer to his personal goal - preparation for a particular job - and that progress toward the goal comes from learning a particular subject. Beitler's (1976) study suggests that her science reading program for allied health students had its motivating effect precisely because the program was career related and integrated, and used material directly related to career preparation.

In his work Bradley cites studies suggesting the need for new theories of achievement motivation which take into account various situational and contextual factors such as: expectations and values of groups significant to the individual; an individual's perception of control over his achievement outcomes; the way evaluation feedback is communicated in both self and socially competitive situations and level of difficulty and cultural relevance of the task. According to Morrison, Watson and Goldtein (1975), the advantaged and the disadvantaged have similar levels of educational aspirations but varying expectations in regard to achieving their goals.

Recent widespread publicity has raised national concern that our high schools are graduating millions of illiterates. In discussion of functional literacy there is real difficulty in the matter of definition. There appears to be little or no agreement on what is meant by functional literacy or illiteracy, so it is difficult to assess the accuracy of the claims. The March 1978 issue of the Newsletter of the Clearinghouse for Applied Performance Testing (p.2) cites some common conceptual definitions as follows: William S. Gray's (1969), "The ability to engage effectively in all those reading activities normally expected of a literate adult in his community."; Thomas G. Sticht (1975), "a possession of those literacy skills needed to successfully perform some reading task imposed by an external agent between a reader and a goal the reader wishes to obtain." And he also says, "Whether literacy is or is not construed as functional depends on the nature of the task ... and not on a person's skill level"; a study by the National Assessment of Educational Progress, "A Mini-assessment of Functional Literacy" (Gadway & Wilson p. 2) used the definition proposed by the National Right to Read effort, "A functionally literate person is one who has acquired the essential knowledge and skills in reading, writing and computation required for effective functioning in society, and whose attainment in such skills makes it possible for him to develop new aptitudes and to participate actively in the life of his times."; a wider view espoused by Northcutt and his colleagues in the Adult Performance Level Study,"... Application of the communications skills, computation, problem solving, and interpersonal relations to the general knowledge areas of occupational knowledge, consumer economics, community resources, government and law, and health." (Northcutt et al., p. 9). The Mini-assessment of Functional Literacy in 1974 represented an improvement over previous measurements of functional literacy in that its exercises

represented a broad range of reading tasks.

In the Adult Performance Level Project results of the survey classified an estimated 20% of the U.S. population as functionally incompetent, 34% marginally competent, and only 46% estimated to be performing at a high level of competence. Of the content areas 13% of the sample were functionally incompetent in occupational knowledge, 21% in health, 23% community resources, 26% in government and law, and 29% in consumer economics (Northcutt et al. 1975).

The 1970 survey by Louis Harris and Associates to measure performance on literacy-related tasks was the first large scale attempt to use an applied performance test to assess performance on real life tasks. It reported some 18.5 million persons ranging from marginally literate to functionally illiterate. The 1685 persons over age 15 had to read and fill out five forms, a personal identification form, application for public assistance, medicaid, a driver's license, and a personal loan (Fisher 1977). The study has been criticized for using the medicaid form because it was found that 26% of the college educated subsample fell into the marginal survival category.

It appears, then, that when literacy is measured through performance tests, as distinguished from standardized achievement tests, many adults, including high school graduates are functionally illiterate. Thus to some people functional literacy is a set of skills and to others it includes more complex tasks. Our interest at this conference I presume is with the more complex tasks.

Of particular interest for the purpose of this conference is the

Functional Literacy Project of the Northwest Regional Educational Laboratory for Development of a New Assessment Methodology in Functional Literacy. This project, according to the project coordinator, Dr. Stephen M. Reder, will use the situation-specific approach which "bypasses any assumptions about the value of particular literacy skills or forms of behavior, and characterizes individuals' functional literacy skills within their local, cultural context. Literacy is assessed in terms of its functional significance ... The research methods required for the situation-specific approach proposed by NWREL will be generalizable to a variety of community-based and occupationally-based settings." He notes later that, "The chief product will be the conceptual framework ... with related field-tested research tools and procedures -- for characterizing functional literacy in situation-specific terms." (Reder 1978).

William Moore's provocative piece, "Community College Response to the High Risk Student: A Critical Reappraisal," challenges a number of assumptions held by educators of the high risk student. What research there is on the negative self-concept of students has been done on children, with practically none done on adults. Motivation, which also eludes direct examination, has been studied only in children, and even there it is on isolated fragments of behavior rather than more complex and encompassing wholes of behavior so that the findings are not generalizable to adults. He notes the paucity of research on learning centers and on the use of tutors with adults (Moore 1976).

Roueche and Mink have been doing interesting work on the student's locus of control, arguing persuasively for developmental programs to work directly to shift the student's de[illegible] external control to exercising his own

internal control, which is seen as necessary to establish personal goals and then to direct the effort to achieve them (Roueche and Mink 1975).

Ross' work on peer tutoring offers some attractive ideas, for example, the use of basic studies second semester students as tutors for first semester students. The one essential requirement to serve as tutor in this program was the experience of having been tutored in the first semester. Unfortunately, what evaluation was carried out did not support the value of having such a peer as tutor. It did, however, show that the tutors benefited in reading and self-concept gains from the experience of tutoring someone else (Ross 1972).

Millonzi's project to increase student facility in communication and computational skills by infusing basic skill instruction in all academic areas, rather than segregating it, ranked behind small class size, setting and counseling. Millonzi referred to the teacher's efforts (at basic skill instruction) as sincere but inconsistent, as is often the case the difficulties in this effort were attributed to ambiguity of program goals, norms and role expectations (Millonzie 1976).

Jonnie Ruth Clark's presentation to an Advanced Institutional Development Program meeting made a number of points which may be cogent over a period of time. She cited as most promising the new developmental approach to curriculum and instruction involving personal and career assessment and goal setting. She noted the value of its providing for immediate practical application of learning experiences; the need for course objectives to have personal or goal related meanings in order to motivate the student for achievement of his/her objectives. She emphasizes the very real problem of identifying effective

teachers for work with students in need of compensatory learning, observing that teachers also need T.L.C. (Clarke & Others 1976). At this same meeting Roueche called for collaboration in content selection between the general education faculty and those who plan to teach the occupational programs so that the students get "hooked" on learning in order that they will perceive the relationship between their behavior and its pay off for themselves (Clarke & Others 1976).

An exciting and interesting program by Beitler for depressed ability students, attempted to meet their needs for relevance of their science learning to their major field curricula. She concluded that a structured, high interest, career-related reading program can produce significant results in one semester among allied health community college students (Beitler 1976). Beitler cited a number of studies supporting the approach. For example Sargent (Beitler 1976) said that reading improvement to be effective must be augmented and reinforced; Twining (Beitler 1976) declared reading to be a continuous process of development which necessitates introduction at community junior college level of various reading skills within content areas in order to increase potential effectiveness and success of the students. Gilbert (Beitler 1976) states that educators should make every effort to develop and use science textbooks that correlate with the known readability level of the students. Caffey's study (1975) of welding and air-conditioning/refrigeration classes at Delgado Community College confirms this need inasmuch as little difference was found between raw scores of control and experimental students in either subject area in this study, one purpose of which was to test the readability of their textbooks. Students were able to correctly fill in fewer than 38% of the blanks on the Cloze test. Their textbooks, it was concluded, were beyond their reading

level. Moore's (1976) article cited earlier calls for the use of textbooks which are commensurate with the clientele.

The perspective of the writer is that of one who for 15 years has been engaged intimately in the administrative responsibility for establishing, maintaining and nurturing a private junior college devoted to preparation of technical level workers in the allied health and human services fields. From its inception in 1964 this college has intentionally sought representation of student origin from a very wide spectrum of backgrounds. This has meant a student body composed of members who come from affluent homes, i.e., the family is financially well-off, one or both of whose parents are, for example, physicians, lawyers, professors, chief executive officers or top officers of a business or manufacturing company, who have excellent academic records and who have no history of significant physical, emotional or intellectual problems; and those members who come from homes of severe economic deprivation, i.e., whose parents have little or no formal education, and one or both missing from the home, very often unemployed, and who have very uneven, often unsatisfactory, academic records and with histories of physical or emotional illness, drug dependency (some treated, some not treated); with most students falling somewhere between these two extremes. The College was started in 1964 and, given the 1960's climate, the student with everything going for him, or more often her, rebelled against her parents by choosing a technical education program at this relatively unknown, unprestigious College. The experience for those students was satisfactory enough so that the non-rebellious 70's students from similar affluent, successful backgrounds continue to enroll. Social agencies looked at the College with fond eyes in the late 60's because sending their clients to the College resulted in their graduating, securing relatively well

paying jobs and going off welfare. Funding for such desirable social programs no longer is easily available.

Faculty members have been overheard to say that the College is open-door. It is true that admission requirements at the College are not very restrictive, and exceptions are made in each freshman class to admit persons who on paper are clearly unqualified for college level work, yet it is inaccurate to say it is open-door. Adequate financial aid is available so that no one ever has been refused admission because of financial inadequacies. There is undoubtedly a fair measure of self-selection away from the College because it is private and therefore presumed to be too expensive by some sectors of the financially deprived population. This aspect of the College has never been formally studied. Mean scores on such standardized tests as the ACT and high school ranks of several freshman classes at the College were studied and found to be above the average at the state community college system with which the College was compared. This suggests the self-selection mentioned above.

The College has had fifteen years experience in recruiting, accepting, retaining and graduating a number of high risk students in each class. A good percentage of these students have graduated from such relatively demanding programs as Nursing, Respiratory Therapy, Medical Laboratory, etc., and they have become successful practitioners, are employed and are receiving satisfactory employer evaluations. The College has never had a separate section, division or program for remediation or developmental studies. The high risk students have received special, often successful, individual advising, counseling and tutoring, but it usually has been carried on within the context of the occupational training and education. This experience is one factor which leads to the

proposition that development of functional literacy and basic skills ought to be an integrated effort carried on within the context of the occupational or technical program at the community or junior college.

Education for health careers has rested on a body of assumptions, some of which cry out for testing. This writer is less acquainted with other fields, but would nonetheless venture to wager that the same can be said for other occupations for which community college level institutions educate and train workers. Verifiable role-needs in allied health and human services at the technician level ought to be examined. For example, for years nursing educators have defended the algebra requirement for students entering the program. Following eight years of effort at the College including trying different kinds of courses and different kinds of teaching, upon launching the development of a competency based program which required identification of successful practitioners and then study of their activities and thinking processes, it was found that what the AD nurse needs is competence in working with certain kinds of ratios and proportions. Likewise, in preparation for movement of the Respiratory Therapy Program to a competency based format, specific laws of physics have been identified, their direct relevance to the practice of Respiratory Therapy described and mapped out in the curriculum plan. These specific principles are now taught within the context of Respiratory Therapy instead of through the three physics courses formerly required before a student was eligible to register for the program.

The competency based movement in education for occupational and career goals is beginning to challenge some long cherished notions. It is apparent that a number of assumptions held by educators for the allied health and human services

fields ought to be examined. A good starting place to determine functional literacy and basic skills at a minimal level for performance is that early step in competency based curriculum development, e.g., competence identification and validation. It is too easy and too superficial simply to specify one or another reading grade level, for instance.

The College is now into the second year of a special project to prepare blind persons for the allied health fields. Totally blind students competing successfully in physical and occupational therapy demonstrate clearly that certain visual competencies which faculty had considered to be obviously essential can be compensated for in ways never thought of by the sighted faculty. An illustration of the value that can accrue to others from studying and solving a teaching-learning problem for one student is the instance of adaptations made in the science labs for the blind student. Peer tutors working with the blind students reported that the tutors themselves gained new insights and understandings from use of the tactile aids prepared for the blind students. Students who were neither blind nor involved in peer tutoring of the blind soon lined up to use the tactile aids when they discovered how these aids helped the sighted student to learn. Solving problems for students with learning problems including functional illiteracy and lack of basic skills, are surely endeavors worthwhile in their own right. Properly attended to, shared and recorded, these solutions for individual problems have the potential to benefit many.

No longer is it adequate for faculty members to sit around tables remembering whatever it was they were taught in their basic programs, looking up references, talking to one another and finally voting on the content of the

programs and courses to be offered. Job competency identification and validation may be approached with one or another strategy, provided it adequately takes into account the job environment and its demands, the specific job skills, as well as the more complex totality of competence.

When the functional literacy level and the basic skills for the job and its setting have been identified and planned for transmission to the student, the faculty must look at the competence, the functional literacy and basic skills, necessary in order for the student to become trained and educated for the job. It is uncomfortably close to true that it may be harder, i.e., the requirements may be higher, to complete the community college job preparation program than it is to go do the job. There may well be a message to the student from the college that certain requirements for the job training are necessary because the faculty needs the student to have them, "We don't know how to teach you without these reading, writing, math skills, etc." The educational system and the educators clearly impose values on the job training which may not be at all related to the job setting.

Given the demonstrated inadequacy of the efforts with the separate divisions and programs for developmental studies and remediation for the high risk student, including those with volunteer, positively motivated teachers and counselors, a different approach is necessary.

The suggestion of this paper is that remediation, support, reinforcement and developmental activities be integrated with the occupational program. The movement toward competency-based education holds promise of offering help, perhaps some insights, to developers in the design of occupation-related

programs at the community/junior college level. The help may be particularly valuable in planning curricula and teaching for high risk students.

Holey, Demarest and Broderick (1977, p. 14) name the three present dimensions of competence to be the practice setting, observable behaviors, and information processing strategies with information from each dimension then synthesized to create a comprehensive view of the competence.

Broderick (1978, p. 4) distinguishes the competency based approach from traditional instructional systems by noting that " ... the competency based approach forces a perspective of 'wholes': whole or total performance capability as demonstrated by expert practitioners; and a whole or total interrelated, dynamic instructional environment." Within the conception of the whole, specifications for sub-components, their sequence etc., are worked out. Thus, competence is not merely the putting together of discrete skills or parts. The skills and parts of performance which contribute to competence must be taught and learned as well as their interrelationship to each other and to the rest of the situation and environment and thus understood and mastered in a dynamic (growing, changing) way. The student must be given access to and help to grasp a picture of the total performance as a whole which is his or her goal. Then, and only then, can the teacher and curriculum planners look to the student to make the connections and see the relationship, that is, the relevance, of the instructional parts to the whole of the performance anticipated as the end result of instruction. For the functionally illiterate the "instructional part" may well begin with the most elementary reading, writing and computation. Research to date points clearly to the need for the student in the '70s to see the relevance of learnings required to reach chosen goals of competence.

The teacher cannot presume that such relationships are self-evident. If they are, it can be counted on to be self-evident only to the already competent. Analysis of performance and thought processes of competent practitioners, experts, in the health and human services fields clearly indicate that some of the relationships thought by the educator to be unquestionable are not to be found in the performance and thought processes of the practitioners. Therefore it appears that careful analysis for identifying and validating performance competencies is urgently needed in order that the components to be taught are truly relevant to the student's, and the teacher's goal. Broderick (1978, p. 17) puts it this way, "Traditional approaches such as the lecture, demonstration and return-demonstration as well as the audio-tutorial and individualized contract method are all appropriate for presenting the information and basic skills components. What is different is that the specifics presented via these methods are related back to the larger area of competence toward which they are leading during instruction. In other words, the novice learns how the parts fit into the whole at the same time that the specific parts are mastered ... feedback to the novice regarding level of achievement can be related back to degree of progress toward the mastery of the larger performance area." She goes further to urge the importance of teaching what the performance toward which the learner is progressing actually looks like, suggesting the video taping of expert practitioners in the work setting. She finds it to be particularly valuable while videotaping when practitioners say or describe what they are thinking or saying to themselves as they perform.

Broderick (1978, p. 10) is careful to call attention to limitations at this stage of development in the identification and validation of competencies

in the health field. She says, " ... descriptions... do not capture, at least as yet, those dimensions of competence which, in the health fields, are experienced by recipients as care, concern, respect, etc. They give only very general clues as to what the information processing strategies that underlie performance might be."

There are some cautions. Demarest (1978), in looking at the limitations of competency based instruction, notes that there is need, of course, to be concerned that item-specific job preparation does not lock the student out from upward mobility. From another perspective it can be said that it simply is not yet known how to predict who will be liberated by what. The person who can gain admission only to the community college - no other higher education options are accessible to him/her - and who is unemployed truly can be said to have experienced more level of liberation upon being specifically prepared for a specific job which he or she secures as a result of the training and education at the community college.

In our eagerness to make job preparation accessible to the high risk student, it may be well to note that Lombardi (1978), in discussing the impact on liberal arts, humanities and general education faculty of the swing to vocational education quotes Parker (1978, p. 463) who warns: " ...the caution flags should be out against an educational course that leads to a continual construction of the liberal arts and general education courses so that career education programs, while apparently being broadened in their vocational scope, are in effect being narrowed into overly specialized career education channels."

Lombardi (1978) in the same paper, reports a consistent upward trend in national enrollment in occupational courses, with estimates varying from one-third to more than one-half. He reports a similar trend in the employment of occupational instructors. Increase in the number of instructors without a college degree increases concern about instructors without teacher-preparation. That situation ought to be responsive to effective faculty development programs.

The following points will serve to summarize:

1. A major part of planning the total learning environment for students could be the competency-based approach which calls for careful analysis of the job in its totality for which the student is preparing, followed by a detailed blue print of all its components, what is to be transmitted and how. Separation of developmental efforts from the program curriculum would be neither necessary nor desirable.

2. Most studies of the experience of students who have participated in separate developmental or basic skills education and training report that these students have suffered "re-entry shock" on moving into regular college work. Student progress might be surer and steadier if integration of developmental efforts were provided for within the regular college program and were directly related to the student's occupational goal.

3. Faculty responsibility for student learning should be fostered, indeed perhaps required. It could be required if normal expectations of all faculty were operationally defined to include such responsibility and the necessary faculty support services were supplied.

4. The self-fulfilling prophesy of expected failure might be bypassed if students were not labeled in advance by means of segregation and identification as problem-learners. The shift ought to be to focus on the problem of how to devise effective teaching strategies.

5. The student could be expected to participate actively in realistically setting his or her occupational goal if there were a clear understanding of what the goal encompasses, and if the steps intervening between goal setting and achievement were grasped and understood as directly related to arriving at the goal.

6. With accurate perception of the performance which the student has as a goal and relevance of the individual learning tasks to the goal performance, the student could actually experience the value of immediately practical skills in many instances.

7. With the goal clarified and the component tasks perceived as relevant, the teacher and the student can focus efforts to achieve functional literacy in terms of the task to be done, and the goal to be reached.

8. Given situation-specific goals and tasks, performance testing could be helpful in diagnosing the student's level of functional literacy, and in devising goal and task-related remediation of deficiencies.

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FUNCTIONAL LITERACY IN TRANSFER PROGRAMS

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The question of functional literacy as it relates to minority students in community college transfer programs may be subdivided into several subordinate questions:

How many minority students are in community colleges?

How is functional literacy defined?

How is transfer education defined?

Should the colleges teach literacy in the transfer programs?

What are the consequences, intended and otherwise, of programmatic efforts?

What types of research are needed?

Minority Group Students

The two-year colleges enroll more students from ethnic minority groups than do any other types of post-secondary educational institutions. And, a high proportion of the students are in transfer programs. The Florida State Department of Education reported that in the three years prior to 1977 the number of female, black and Hispanic transfers from the two-year colleges to

the universities in that state had steadily increased (1977). The Virginia State Department of Community Colleges pointed out that 15 percent of the first-time students at Virginia community colleges and 13 percent of the graduates in 1974-75 were minority group members; however, a greater proportion of Anglos than minority graduates selected transfer curricula (Roesler and Jackson, 1975; DeFreitas and Roesler, 1976). The Washington State Council for Post-Secondary Education indicated that minority enrollments increased steadily between 1971 and 1976, constituting 14 percent of the total in the last year (Curry and Johnson, 1977). In state after state the reports are similar: minority group enrollments have been growing in the two-year institutions.

Reports from individual colleges similarly indicate increases in minority group enrollments and also shed light on the question of programs in which those students enroll and the extent to which they tend to graduate. El Paso Community College (Texas) conducts annual attrition studies. For 1973 and 1974, non-returning students were found more likely to be members of an ethnic minority (Hall, 1975). Prince George's Community College (Maryland) reports an increase in the proportion of black students who graduated from transfer programs between 1975 and 1977 even though overall enrollments in transfer programs were decreasing in those years (Larkin, 1977). Okaloosa-Walton Junior College (Florida) found no significant difference between black students and other other students in terms of hours of enrollment and rate of withdrawal; however, blacks were found to have a higher failure rate and a lower record of course completions (Durham, 1976). At Los Angeles City College minority students made up 74 percent of the student body in 1977 (Gold, 1978) and for Los Angeles District as a whole, minority group student enrollments

have grown to more than 60 percent, an increase of almost 12 percent from prior year (Weiser, 1977). Reedley College (California) found Mexican Americans to comprise 30 percent of its students, a high proportion, indeed, but this in an area where Mexican-Americans comprised 47 percent of local high school students. Only five percent of the Mexican-American students withdrew from college during 1974-75, whereas approximately eight percent of non-Mexican-Americans withdrew. The college suggested that a combination of effective recruiting, peer advising, financial aid and other support services contributed to the greater persistence of Mexican-Americans (Clark, 1975).

Undoubtedly, the two-year colleges enroll a high proportion of minority group students. Although there is conflicting data on these students' persistence rate, a sizeable proportion of them do get through two-year college programs and are made eligible for transfer to senior institutions. It is also clear that the two-year colleges have mounted special activities to assist members of minority groups as well as other students to stay in school and successfully complete the programs for which they enrolled. The old days of allowing the students to enter the institution even while taking a casual approach to their success or failure are gone. Whether this change is due to reduced enrollments that have caused the colleges to be more concerned with keeping the students they have, or whether it is due to the availability of special funds that make it possible to pay for additional assistance to students of lesser ability, it is not important. The point remains that efforts are being made to keep the students in the institutions and to insure that they get through the programs.

The procedures taken to assist students to stay in the colleges are many and varied. One project that sought out exemplary programs designed to

assist lower achievers named Bronx Community College (New York), Oscar-Rose Community College (Oklahoma), Southeastern Community College (North Carolina) and Staten Island Community College (New York) as among those sponsoring such programs (Colston, 1976). Other colleges all over the country have mounted such programs. Sacramento City College (California) provides minority students with extra tutorial and laboratory assistance as a way of encouraging them to pursue careers in mathematics, science, technology and the allied health fields (Kinnebrew, 1975). In a study done in four community colleges in Texas, administrative intervention, special counseling and individualized instruction were found to increase student retention (Appel, 1977). Other studies in the ERIC system similarly indicate that when special treatment is applied to students they tend to stay in school and to succeed in their chosen programs to a greater extent than do students to whom the special interventions are not made (See, for example, Hernandez, 1977; Gibson, 1974; Saucedo, 1977; Holiman, 1977). Perhaps there is nothing surprising in that revelation---special treatment of any sort yields results---but it is gratifying to note that lower achievers can be helped and that they are being helped in a number of two-year colleges.

Functional Literacy

Functional literacy can be defined in many ways. One is the level of reading, writing, and calculating ability which a person needs to succeed in the public realm in which he or she chooses to operate. In this regard, the level of literacy required to function as a citizen, taxpayer, homemaker or merely "on the street" serves as a definition. Second, the level of reading, writing and ability to send and receive messages that it takes to

obtain and maintain a job serves as a definition. And obviously different levels of literacy are required for performance in different types of jobs. The third definition of functional literacy is that which it takes to perform successfully in a college program. Here again, different types of programs require different levels of competency. All these definitions, then can be subsumed under the statement: Functional literacy is that ability to communicate in the symbolic language of reading, writing and speaking that is adequate for a person to maintain himself in the context of a specific situation.

So put, functional literacy is seen as related to the milieu in which the person finds himself. It is relative; there are no absolute minimum standards of competency. A functionally literate person in some school settings may be functionally illiterate in certain jobs. And a person who is quite able to communicate within the confines of certain jobs may be functionally illiterate for purposes of a college transfer program.

Transfer Education

Transfer education or the college transfer program that most two-year institutions provide may similarly be variously defined. We may say that a person is a transfer student when he enrolls at the college and declares his intention to transfer to a baccalaureate degree-granting institution. Another definition of transfer is to restrict the term only to those who successfully complete an associate in art or an associate in science degree or those who, in fact, do transfer to a senior institution. And yet a third way of defining transfer education and transfer student is to so label certain courses and those enrolled in them.

Depending on the definition that is employed, the numbers of transfer students and the types of experiences they enjoy while at the institution shifts about. If students say they are transfer students, regardless of the types of courses in which they enroll, they enjoy the self-applied appellation If they are not transfer students until they have successfully transferred or completed a degree, the definition must be suspended until it is determined whether the person has gone on to another institution or successfully completed program requirements. Most commonly, however, the definition employed is the one that is institutionally mandated: A transfer student is one who is enrolled in a transfer course; a transfer course is one that the college so labels, subject to the constraints of accrediting agencies, senior institutions and state-level agencies.

Should the Colleges Teach Literacy in the Transfer Programs?

One of the biggest controversies in two-year colleges is that they typically admit all students but may restrict admission to certain programs to those who are reading or writing above a particular level. Since the application of a literacy test tends to discriminate against members of ethnic minorities who may have been less well prepared in the lower schools, the issue becomes freighted with overtones of racism. So we hear that reading tests are culturally biased and that writing tests discriminate unfairly against those whose native language is other than English. And so we hear that all tests of literacy discriminate against those who have learned to communicate through the use of other, different symbols.

If the colleges are to admit everyone and if they are to maintain certain admissions requirements for different programs, the controversy will continue.

Selective admissions to any program is as discriminatory as it is justifiable. Regardless of the yardstick applied, the people who are shut out of the programs in which they wanted to enroll have been discriminated against. And yet, with accrediting agencies, state licensing boards and senior institutions looking in, program directors feel justified in admitting only a select few, particularly if the field of endeavor for which the program prepares people can take only so many graduates or if college facilities allow for only so many matriculants.

Should the colleges restrict admissions to certain programs? The answer to that question precedes the question of whether the colleges should teach a level of literacy sufficient to enable students to function within the programs. For if some applicants cannot gain admission to a program because their level of literacy is lower than a cutting score, the issue is resolved for them. But if the applicants <u>are</u> admitted to the program, then the program operators have the responsibility to teach the students the skills required for them to succeed in it. In short, I discount completely the pattern of allowing all to enter and using the program itself to screen out the unworthy; first, because one cannot at the same time teach and judge and second, because it is too expensive in terms of concern for humans to allow sizeable numbers to enroll with the expectation that many of them will not complete the course of study.

The pressures for selective admission to various programs have grown in recent years. In the 1950s most colleges screened students into remedial programs if the students' prior high school grades or entrance test scores suggested they might not be able to succeed in the transfer program--in short, if there was a reason to believe that the student was functionally illiterate.

In the 1960s the pressure to allow anyone to enter a transfer program grew, the reason being that remedial programs were seen as catch-alls for the less worthy, as holding tanks for students who must be "cooled out" of higher education. And now, the pendulum swings back with many institutions again screening students into remedial programs, moving away from the attitude of letting students try everything and fail if they must. The community colleges are not alone; the lower schools in many states have begun competency testing for graduation, withholding diplomas from those who are, in their terms, functionally illiterate. And the community colleges are being pushed toward entrance testing by state agencies that are no longer willing to fund students who do not make satisfactory progress toward the degree. Accordingly, for both sides, the effort to select students into programs for which they are functionally literate is effecting the two-year institutions. The institutions are reacting by resetting their screens.

It is quite possible to teach functional literacy in the transfer program. Special intervention, any type of intervention, can help. Any student in a transfer program can succeed if he or she is provided with tutorial assistance, access to a learning lab, special counseling, peer group assistance and/or a variety of other aids. But it takes more than willingness to provide these services; it takes money. The question is how much money and effort the colleges are willing to put into the extra treatment required by students who enter programs with which they are not capable of coping. Given a choice between an admissions screen to keep students out of the program and the allocation of sizeable funds to assure that same student success if he is admitted, many institutional managers who are faced with static budgets opt to keep the less well prepared---the functionally illiterate---students out of the transfer courses.

Denying functionally illiterate students admission to transfer programs is difficult to justify. The open door philosophy of the community college indicates these students should not be denied. The fact that they can be taught to succeed suggests they should not be denied. And the fact that students who are denied access to the transfer programs are typically denied exposure to the humanistic and scientific thought that are found in the transfer programs mandates that they must not be so denied. The community colleges have succeeded in opening access to all; if that access is limited to a remedial program that focuses primarily on the same type of basic education that failed the student in the lower schools, that student has been cruelly denied access to the higher learning. The colleges cannot afford to operate separate programs for the less qualified. They must teach literacy in the transfer programs.

Consequences

All decisions have their consequences. Throughout the years, the colleges have had to adjust their offerings to accomodate different demands, changing student patterns, shifting purposes. In recent years, the idea that a student was not to be punished for failing to learn arose, hence students were allowed to withdraw up to the last day of the class without receiving a failing grade. The problem of punitive grading was solved, but the consequence was that more and more students tended to take a casual approach to their studies, to drop in and out of the institution at their whim. Concomitantly, the phenomenon of grade inflation has been seen recently with as many as 40 percent of the students in some colleges receiving 'A' grades for the courses in which they were enrolled. Here again, the intent was to allow students to have a successful experience and to transfer to a senior institution with a high grade point average. The

unintended consequence has been a loss of institutional credibility and a move on the part of the universities to impose entrance examinations at the junior level.

Over and over we see attempts to solve certain problems leading to consequences that were unforeseen. Students' different learning styles were to be accomodated by a variety of media; the media were introduced but costs of instruction went up. The traditional staff members and accreditation agencies were to be circumvented through offering adult basic education as non-college-credit; the result was that the community colleges gained the reputation of being something less than true collegiate institutions. Open access to job training led to better occupational programs but the college image as an institution leading students to transfer suffered. And because many students failed when accepted uncritically into the regular classes, special tutorials, learning laboratories and support programs for less able students were erected. However, the perception that certain groups of students are unable to function without these crutches has grown.

In common with any public agency an educational institution must maintain its legitimacy. The community colleges have strived to maintain their legitimacy in the post-secondary sector through numerous strategems. One example was their behavior in the 1950's and 1960's when they sought people with doctoral degrees to serve as staff members and rewarded current staff members when they obtained the higher degree, even though the possession of a doctorate bears little or no relationship to a faculty member's professional activities. The doctorate was a way of saying, "We are as good as the senior

institutions". In some measure, the move toward setting standards of literacy for admission to transfer programs now is an attempt to regain the legitimacy lost when the colleges accepted adult basic studies and job training programs that could in no measure be considered "college level". The unintended consequences of this latest attempt to gain legitimacy as a collegiate institution will be that students are held away from the liberal arts just at a time when they should be exposed to them. Setting a cutting score for admission to the transfer programs will have the additional consequence of leading to ethnic separation within the institutions, a charge the community colleges can ill afford to have leveled at them.

A minimal cutting score for admission to all transfer courses has the further effect of denying the variations within the transfer programs. It takes a different level and type of literacy to succeed in a literature course from that which it takes to succeed in a mathematics course. Scientific literacy is different from metaphoric literacy. Learning a foreign language is not the same as learning the fundamentals of business. A blanket cutting score denies even the fact that different sections of the same course require different standards of functional literacy.

Studying the liberal arts in context can help literacy. Reading levels have little relationship to one's ability to appreciate music. Art appreciation has no connection with one's ability to write. The history and literature of minority groups and ethnic cultures are basic to people who are striving to find their own identity. And there can be no excuse for denying people access to learning a foreign language merely because their level of

efficiency in English is not up to some arbitrary standard. In sum, if functional literacy is the ability to function in a specific context, the term, "transfer program" is not a sufficiently specific context for which standards can be set.

The community colleges must reconcile their conflicting philosophical bases. They say they exist to meet everyone's needs; if so, they cannot rightfully deny anyone access to a program of his or her choice. They say they are a steppingstone to the higher learning; hence they cannot condemn sizeable percents of their student body to a form of education that is less than college level. They say they respond to community needs, but they must reconcile themselves to the fact that curriculum is dictated more by internal institutional dynamics than it is by external pressures. They say they have something for each student, yet they must mount a sizeable effort to provide a variety of media necessary for each student to succeed.

If they would maintain or reestablish their legitimacy the community colleges must stabilize their curriculums. In practice, this means that weaker programs, programs with low enrollments, will be dropped. But different criteria can be applied. In order to qualify as a justifiable program a curriculum should be socially useful, verifiably educative and not readily available elsewhere. A program that brings people closer in touch with the ideas that have shaped our civilization is more socially useful than one that teaches an individual to disport himself in a hobby. A course that has a measurable beginning and ending point of learning is more educative than an activity of unknown consequence. And attending to courses that are not readily

available elsewhere would lead the colleges in the direction of transfer education and the liberating arts and away from the basic studies that are properly the province of the lower schools. The community colleges cannot build an instantly responsive environment that is attentive to every learner's needs, but they can stabilize their objectives, the end goals of their programs. A major issue facing the community colleges in coming years is in the area of curricular responsibility. They must move away from the hobby courses and toward the higher learning. They must move away from the activities without specific intent and toward the verifiably educative. And they must let go that which people can learn elsewhere.

Selective screening into transfer programs could not be maintained in an earlier era because students demanded and got the right to fail. The unconscionable attrition figures led to numerous strategems and a variety of unintended and untoward consequences. Selective admission into transfer programs is being tried again because it is easier to screen students out and block than it is to establish the criteria for a functional literacy course by course. And yet, unless those criteria are defined, selective admissions will again be unsuccessful. Granted that it takes a special effort to bring students to the point at which they can succeed in the courses and programs of their choice, the community colleges must find the funds and the ways to do so lest they be rightfully accused of failing to fulfill their mission.

Needed Research

Many types of research are needed if the community colleges are to successfully operate their transfer programs for all students. One area of

needed research is on the adequacy of preparation for university transfer. Which students get into the senior institutions? Who succeeds there, and why? How do these successes relate to different types of transfer courses at the two-year colleges? Many of these questions can be answered through a retroactive look at students who receive baccalaureate degrees. Sampling baccaluareate degree recipients and asking them to retrace their college career would yield much useful information. How many of them started in two-year colleges? What types of programs did they take? How many times did they drop out and return? The questions could be answered by reviewing the transcripts of bachelors' degree recipients.

A second area of study would begin at the other end; we would ask students who matriculated in the community colleges what they want, what they are getting. These types of follow-through studies could be done by sampling groups small enough so that interview techniques can be maintained. The students would be asked initially why they are attending and during each term asked whether their goals have changed and whether they are getting what they need. Students who leave would be asked why they have left and should again be followed term by term to determine whether or not they reenroll at that college or at a different institution. Thus, we would learn the degree to which success or dropout relates to types of courses in which the students are enrolled. Is a certain level or type of literacy required to succeed in certain programs? Do special interventions help only students with certain goals? Much more can be learned through these two types of studies than through the community surveys and forms of student followups that are typically conducted at present.

A third pattern of research should attend to courses and curriculums. What is the level of literacy that it takes to function in a certain course? Patterns of mastery and competency for each course in a sequence must be established and the different competencies required for different sections of the same course must be traced. We need concrete analyses of classroom tests as a way of assessing levels of literacy required just as we now measure the reading level of textbooks.

Functional literacy is a broad term covering a variety of different competencies. It is situational; what is functional in one context is not in another. Breaking down the definition into the components of what it takes to succeed in specific courses and programs is essential if the community colleges are truly to deal with the functional illiterate. The trend toward setting arbitrary standards of reading and communication, standards that may apply to some segments of the program and not others, is unwarranted and is leading the colleges away from the types of research and instruction that they must do in order to fulfill their mission.

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TECHNICAL/OCCUPATIONAL TRAINING IN THE COMMUNITY COLLEGE

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According to Lombardi,

> The ups and downs of enrollments in courses and programs are part of the rhythm of education. Transfer education has probably reached its low and occupational education is high. There is little likelihood that transfer education will regain the ascendancy it held up to the 1960s.

The community college, created and advanced as the nation's democratic institution for providing educational opportunities for those previously excluded, faces a new and somewhat different future. Since the early sixties, community college leaders have witnessed a phenomenal growth in enrollments in the technical/occupational areas.

In examining the possible causes of this enrollment growth, it may be concluded that it is the result of: the Vocational Act of 1963 and its amendments; the decline in the employment rates among four-year college and university graduates; the increase in enrollments of community college part-time students, adult learners, ethnic minorities, and women; the increase in cooperative efforts of business/industry, technical training centers, and community colleges; the career education movement; the Rehabilitation Act of 1973; and the overall changing values and attitudes among students and their families as to the level of education necessary to qualify for desirable employment opportunities.

These growth factors, when combined with available data relative to enrollments and graduates, confirm the shift from the transfer to the technical/occupational areas. According to the American Association of Community and Junior Colleges, nearly 50 percent of students enrolled in

community colleges in 1972-73 were studying in the occupational fields. In 1974, Garland Parker surveyed 157 two-year colleges and reported 56.8 percent of the enrollees in occupational fields. Parker also noted "the thrust toward technical education continued its upward motion in 1974-75."

In addition to enrollment growth, according to a preliminary U. S. Office of Education analysis of trends in associate degree and other formal awards for less than four years of study it is reported that in a five-year period, from 1970-71 to 1975-76, these degrees and awards increased 55 percent. In technical/occupational areas, the number of degrees awarded increased by 96 percent, including a 117 percent increase for degrees awarded to women. It was further noted that the technical/occupational areas in which degrees showed the highest increases were also fields in which the employment outlook showed a balance between supply and demand.

This enrollment growth, along with enrollment outcomes, has contributed greatly toward solidifying the fundamental mission of the community college. However, it is necessary to view this upsurge and trend as an indicator for increased concern relative to providing adequate technical/occupational training experiences that will aid these students in reaching an acceptable level of "functional literacy"--for now and for the future.

The concept of functional literacy is being explored, debated, and in some instances, is running rampant in numerous educational circles. One finds it in referring to required high school competency testing program, and it is ever present among the proponents of "back to basics." What is this functional literacy"? If one accepts that literacy is considered as the ability to read and write and then considers that, in order to be

functional, one must be contributing to the development or to the maintenance of a larger whole--then it may be concluded that functional literacy is the ability to handle necessary communication skills while contributing and becoming productive in society.

To the community college, this concept is now new. They have made strides toward developing and implementing learning experiences that in many instances have allowed students to function at levels that guarantee meaningful, productive and successful lifestyles.

The issue here is not commitment to the concept of providing adequate learning experiences and skills in order to render functionally literate constitutents, but rather to reexamine the capability of the community college to make it possible for each student to learn as much as he or she is capable of learning and to perform up to capability.

Students enrolled in the community colleges represent a population with a diversity of interests, needs and abilities and career goals. This diversity is also characterized by age and life-style--and the rapid increase in participation among women, minority racial groups, many of whom are part-time students. Bringing the students into the changing American economic climate without relegating them exclusively to technical/occupational training is complex and difficult. Community college educators are confronted with the tasks of helping the student to learn employable skills through the technical training and, at the same time, offering opportunities for upgrading in the traditional academic skills.

The students of the seventies may be considered different in ideology from those of the sixties. While the students of the sixties regarded the

matter of making a living as materialistic, the student of the seventies regards making a living as a necessity for survival. A student is no longer viewed as someone apart from society but as a productive part of it.

If American society is to continue to depend on learning, performance, and competence for its progress, then the community college must deliver information and instruction that will improve productivity. Unlike the transfer student, the technical/occupational student is result oriented upon enrolling in the community college. Many of those students are already employed and desire additional skills for upgrading. Others may have completed a baccalaureate degree and returned to the community college to obtain marketable skills training in occupational areas. There are also students who desire a skill for skill's sake with no intention of earning a living as a result of the study. And, there are numerous technical/occupational students who desire the entry level training necessary for immediate employment. Whatever career goals and/or choices have been predetermined by these students, these choices are for the most part results oriented within an often predetermined time frame.

The problem, then, becomes not only "why are they here," but "what did they bring with them?" For it is not to be assumed that because students have made technical/occupational career choices, that they are not functionally literate. An assessment of basic learning skills can often reveal that students are functioning at an acceptable level of productivity. It is imperative that these necessary skills be delivered to this diverse student population through a variety of processes.

These processes have to be developed with emphasis given to programs and courses, calendaring and scheduling, and the use of special facilities.

In the area of vocational/occupational training, there is a great need for sound and imaginative planning for teaching students who possess marginal or few basic learning skills. A plan developed with full knowledge of the abilities of students would of necessity attempt to integrate the teaching of reading and writing into the technical training areas. However, it should be noted that often when this is attempted, students with low reading and writing ability may be unable to apply to their content courses the skills learned in the reading and writing courses.

If one assumes that the delivery of knowledge should not be segmented, and that interrelatedness would prove the knowledge as useful tools, then it may be profitable for reading and writing teachers to work with individual content course instructors in order to approach student difficulties as a team. While it is necessary for the technical college instructors to develop awareness of the population group they teach, they will also need to select textbooks appropriate to the students' reading levels, to demonstrate to students how to read the text, and to preteach vocabulary words. They must be able to show students how to write summaries and papers, and they will need assistance in their efforts to write easy-to-read tests for students. A team approach to planning and teaching would allow for presenting and reinforcing the necessary skills throughout the training period.

This represents only one of a multitude of approaches designed to eliminate the skill deficiences identified on many community college campuses.

Many approaches designed to eliminate the skill deficiencies identified, developed and implemented and many have met with some modest degree of success. It may be assumed, however, that whatever approach is selected, successful elimination of skill deficiencies does not occur as a haphazard, random operation.

Developmental courses and programs must be planned according to the identified needs of the students. This planning should evolve as a collaborative effort of all concerned parties.

It appears that once desired levels of competencies are clearly designed and student deficiencies are identified, the initial planning stage is in operation. The search for the "best" delivery system involves a process designed to identify and match the student's learning style and the methods of instruction. The cognitive style mapping plan now centered at Oakland Community College (Michigan) represents one scientific means of determining how individual students learn best. It is predicted that this effort will spread as community colleges continue to experiment with various approaches to delivering basic learning skills.

These efforts could lead to an important breakthrough in the area of technical/occupational training. It has been established that technical/occupational instructors favor and often find success in the use of teaching methods and techniques that are not typically used in the liberal arts. One example is the systems approach. Hunter (1970) outlines how this approach may be applied to teaching general education courses to technical/occupational students. The systems model that Hunter describes is based on assessment of the students at entry and carefully defined sets of

behavioral objectives; individualized, prescribed learning experiences are provided to help students achieve the course objectives. This approach provides opportunities to explore matching student learning styles with methods of instruction, thereby offering individualized instruction that is more meaningful and designed to eliminate identified skill deficiencies.

Cross (1976), in her address to the AACJC 56th annual meeting, describes the instructional revolution in which individualized, self-paced methods have come to the fore. She predicted that the shift in emphasis from "teaching" to "learning" will require teachers of the 1980s to be skilled diagnosticians and treaters of learning problems. Staff development has been identified as a possible means of providing opportunities for teachers to gain skills in diagnosing and treating learning problems.

The community college has led the way in the staff development movement and organized programs are operative on many campuses. There is little evidence to show whether there are special staff development programs to meet instructional needs. If instructional development is considered the desired outcome of staff development, then certainly emphasis should be given to the needs of those persons who are responsible for the training of this growing community college population--the technical/occupational student.

Organizers and planners of staff development programs should be aware of and respect the specific needs of this faculty group. Because of the rapidly changing technologies, teachers are faced with the responsibility of upgrading skills at a much faster pace than other faculty. It is also the responsibility of the technical/occupational faculty to maintain clear

and distinct lines of communication with industry and with placement officials at the institution and in the community. If the technical/occupational faculty provides reinforcement to the basic skills of communication, then it is necessary that a regular dialogue be maintained with those primarily responsible for teaching the communication skills.

These goals or objectives of a well defined staff development program on a given campus may contribute greatly to efforts in serving the needs of students with learning disabilities. William Moore (1970) reminded us that:

> There was a time when missionary zeal rather than teaching skill motivated many faculty members to give instruction to the educationally disadvantaged. That day has passed. The faculty members in the community-junior colleges today are faced by inquiring, ambitious students--even when they are marginal. Helping these students to compensate for previous social and educational deprivation, while preparing them to compete in a highly complex society demands teaching skills of the highest order. The faculty members who face this problem can hardly remain unprepared or futile or complacent or depend upon his zeal and intuition. He must, on the contrary, be interested, inventive, and hard-working; but most of all he should be well-trained and sensitive.

The community college, a sensitive and inventive institution, must continue to move toward full professional development of its largest capital investment in an all out effort to meet the needs of students who have the potentials and capabilities of becoming productive citizens.

In summary, <u>why reexamine our capabilities</u>?

<u>Student Demands</u>

Students want training that is meaningful and useful. Marginally prepared students desire not only an identification of basic learning skills deficiencies, but clear and definite attempts to eliminate these deficiencies.

Technical/occupational students expect these attempts to be considered as a direct part of the technical training process and not set aside as separate and distinct learning disabilities. Organized staff development can serve as a vehicle for exploring this problem.

Public Demands

Accountability and productivity are in constant demand by cost-conscious boards, legislators, and anonymous leaders of our institutions. The "golden years" of the sixties are remembered with fondness. In the midst of student unrest, competition for tax dollars was minimal, and all of education, including community colleges, each year received a larger and larger percentage of local, state, and federal budgets. Those days are numbered. Federal dollars have been cut and, at the same time, state and local funding has become increasingly more difficult to obtain because of widespread economic problems and strong competition for limited tax dollars from other more visible (and vocal) governmental entities and social forces.

The seventies are plagued by confusion and uncertainty and the demands for accountability and productivity are on the agendas of the taxpayers throughout the country. Efforts to respond to these demands are on the agenda of most community colleges as they attempt to develop and implement programs and courses that are viable and valuable in the student learning process.

From an optimist, "all is for the best in the best of possible worlds." Times filled with financial stringency and demands for functional literacy can produce a concerted positive response to student learning needs. These are times for creating and designing learning-teaching strategies that are

results oriented. These are times for planned faculty development programs to focus attention on the total learning process while allowing students opportunities for becoming a part of the "world of work." The community college has the capability and the know-how. It can respond to student demands, faculty demands, and public demands.

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FUNCTIONAL LITERACY AS RELATED TO LICENSURE OF HEALTH PROFESSIONALS

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Functional literacy, licensure and health professionals are terms which are broad in scope. It is important at the onset of this paper to limit the scope and focus of the subject.

Functional literacy is a term which does not appear to have a common meaning. For purposes of this paper, functional literacy is defined as the possession of skills needed to successfully perform communication and computational tasks which will allow the reader to obtain his goal. Powell defines functional literacy as "possessing skill at a level which matches the readability level of the work material."[1]

Licensure is a process by which an agency of government, usually the state, grants permission to persons to engage in a particular profession. Licensure laws are primarily for the protection of the public. The aspect of licensure which will be the point of focus in this paper will be that of the licensure examination. Licensing examinations are designed to measure a minimal level of competency. In most states, criteria for writing the examination includes graduation from an approved school or program. Included among health programs in community colleges which require licensure of graduates are: Dental Hygiene, Medical Laboratory Technician, Radiological Technologist, and Associate Degree Nursing.[2]

It is impractical to attempt to discuss each program in the allotted time. The Association Degree Nursing Program is the most expensive of the health programs in community colleges. The National League for Nurses reported over six hundred Associate Degree Nursing Programs in the United

States. Discussion will be focused on nursing students with findings applicable to other health care students.

Lucie Young Kelly in her address on Credentialing of Health Care Personnel, points out that:

> "Only ten health occupations, including professional and practical nursing are licensed in all states, but 18 others are licensed in one state or another, and a number of newer health occupations are making determined efforts to become licensed. This inconsistency in licensure can result in lack of geographic mobility for those affected by it. Only nursing with it's National Licensure Examination System, permits licensure by endorsement from state to state, but even nursing does not escape the mobility criticism, since some states have recently changed previously universal criteria for licensure. In California, for instance it is not necessary for nurses to graduate from a school of nursing to take the licensing examination, and several states permit certain former armed service corpsmen to take the examination without having attended a nursing school."[3]

Discussion of the topic will be centered around the following problems:

1. Less than 100 percent of Associate Degree Nursing graduates pass the State Board of Nursing Test Pool Examination.

2. The majority of students entering health programs in community colleges are deficient in reading skills.

3. Graduates of community college health programs with deficiencies in reading skills frequently have difficulty in passing state board examinations for licensure.

4. State board of nurse examiners question the quality of nursing programs where less than 75 percent of their graduates pass the licensure examination the first time.

The State Board of Nursing Test Pool Examination is a national standardized examination which is given simultaneously in all states. This standardized examination has not only given nurses the opportunity for geographic mobility and the freedom of choice to practice where they wish, but it has also provided all parts of the country with nursing services of relatively comparable quality.[4]

Statistics from the National League for Nurses regarding the results of graduates taking the State Board of Nursing Test Pool Examination during the years of 1968-1974 are as indicated on the following page.

YEAR	TOTAL NUMBER A.D. PROGRAMS	TOTAL NUMBER GRADUATES FROM ALL RN PROGRAMS	GRADUATES FROM A.D. PROGRAMS		STATE RESULTS	
			NUMBER	PERCENT OF TOTAL	NUMBER A.D. GRADUATES TAKING TESTS FOR FIRST TIME	PASS RATES FOR A.D. GRADUATES
1968	330	41,555	6,213	14.9	4,729	74%
1969	350	42,196	8,701	20.6	5,996	72%
1970	444	43,639	11,678	26.8	8,300	74%
1971	491	47,001	14,754	31.4	11,575	76%
1972	542	51,784	19,165	37.0	15,012	77%
1973	577	59,427	24,850	41.8	19,876	78%
1974	604	67,628	29,299	43.3	25,057	81%

In 1977, eighty-two percent of Associate Degree graduates passed the Examination the first time and 96 percent the second time. The increase in ADN graduates passing the "Board" on the first try has been less than 10 percent since 1968.

The philosophy of most public community colleges includes an "Open door" admission policy, allowing minimal criteria to be set for admission to nursing and other health programs. Individuals who could not afford to attend other colleges and/or who could not qualify for admission to other colleges are now able to pursue advanced education. Characteristics of the community college student differ from that of the traditional college student. Open door admission policies do not do justice to health programs which require a high integration of knowledge and skill in order to make independent judgments affecting health care.

The majority of students are economically and/or educationally disadvantaged causing many to encounter functional literacy problems. Reading and mathematics skills are weak. While discussing trends to admission policies, Susan Sherman notes that "admission policies and procedures in Associate Degree Nursing programs seem to reveal a tendency to separate the desirable qualities generally sought in a potential nursing student from the actual qualities of the student population in the community or junior college."[6]

Ruby Herd, President of El Centro College in Dallas, Texas points out that:

> "Most people, we have learned approve of "open door" policies until they attempt to come to grips with planning educational programs that require precise skills, sophisticated information systems, self discipline, clearly defined goals, and decision making that affect matters of life and death. At that point they are apt to approve of "open doors for programs other than their own."[7]

Roueche described disadvantaged community college students as "severely deficient in basic language and mathematical skills, having unrealistic or ill defined goals, and coming from homes where there is little support or an understanding of what college work requires."[8]

Tousto and Beitler reported similar findings among students at New York Community College. The College has an "open" admission policy. The majority of their students are from a minority population, commute to the college and have a high school G.P.A. range of 70-75. They have limited reading and study skills.[9]

Tousto and Beitler reported reading scores for nursing students on a standardized test ranging from 7.0 to 14.6 in 1973 and 5.9 - 13.9 in 1974. Reading and study skills were limited.[10]

Beitler found that high school records and performance on standardized tests indicated that students admitted to the allied health programs at City University of New York had not acquired the reading skills necessary for successful performance in college science curricula. She states that "Reading Competency on the college level must be acquired in order to maximize learning in the classroom, laboratory and clinical environment."[11]

Beitler also described another category of underachievers in the community college as: "Those who, despite average or above average intelligence, have not developed adequate academic skills. These students, too, exhibited difficulty in understanding, organizing and internalizing written materials on a college level."[12]

Colleges offering nursing or other health programs which require licensure of its graduates need to include courses which will improve the basic skills of the student. These courses would ideally be offered prior to enrollment in the program or spread throughout the first semester or school year.

To be successful on the State Board of Nursing Examination, the graduate must be able to demonstrate knowledge and skill basic to the practice of nursing in five clinical areas. The tests are the objective type in which patient situations are given followed by questions which a choice of answers. The one best answer must be chosen. The graduate must be literate enough to comprehend what is being asked and to apply the knowledge acquired during the past years as evidenced by a teacher-made test.

Beitler determined that a facility in reading skills was a necessary factor for successful performance on licensure examinations. She developed a "science reading" program for allied health students which focused on the preparation of the students for their programs of choice. The reading materials used directly related to their careers. This motivated the students and produced a significant improvement in reading skills. "The science reading program was developed to help prepare the student for successful completion of career programs in the division of allied health and licensure examinations."[13]

Herd, at El Centro College, in an effort to increase success on licensure examinations, developed a freshmen course which included developmental reading and study skills for allied health systems students. The Developmental

Skills Department cooperated in establishing an auto tutorial laboratory to help students with clinical techniques and life science materials. Seminars were also provided in order to increase proficiency in skills specifically related to licensure.[14]

At State Community College of East St. Louis, Illinois nursing students were also determined to have functional literacy problems. Reading skills of the students are assessed after selection but prior to entrance into the program. Students with deficiencies are required to take a course which includes reading skills, note taking, test taking, and study methods. These efforts produced an increase in reading ability ranging from one month to two years and seven months. It is interesting to note that students with the lower scores initially showed the most improvement. In an analysis of reading scores of those graduates who failed on one or more of the State Baord Examinations, the mean reading score was 9.9.

Gibson analyzed the teaching strategies used with graduates who had written the State Board Examination between December 1972 and December 1973. twenty-three out of thirty responded to a questionnaire. Reading habits were given as the greatest hindrances in writing the examination. Since the test is timed, slow readers had great difficulty. Thirty-five percent indicated on the questionaire that they had a reading problem. Gibson concluded that "the reading problem may very well have affected those graduates who failed one or more tests on the State Board of Nurses Examination. Consideration should be given to students who read slowly. The effects of their reading habits are detrimental to their scores."[15]

The State Board of Nursing Test Pool Examination is the evaluative tool used by State Board of Nurse Examiners to determine whether or not an individual shall receive licensure as a Registered Nurse. When evaluating programs for continued "approval", State Board Examiners place considerable weight on the performance of graduates on the licensure examination. Programs where the success rate is less that 75% are of much "concern" to State Board Examiners.

Herd states that "our own Board of Nurse Examiners struggled with us over its recommendation of one-year probation followed by withdrawal of accreditation the second year from nursing programs where less than 75% of the candidates taking the state exams for the first time failed to pass all parts of the exam."[16] She points out that graduates of various other professions are allowed more opportunities then nurses to retake their examinations. Herd referred to another college president whose nursing program was in jeopardy because of the low percentage of graduates who passed the examination on the first try. Both presidents felt that the number of graduates who passed the examination was still a significant contribution to the health manpower of the community in which they were located.[17] Concern regarding a low success rate is not unjustified. However, other factors would be taken into consideration prior to withdrawal of approval of the Program.

State Board Examinations are written by experts in the field, in terminology geared toward the traditional nursing graduates. The majority of graduates of Associate Degree Nursing programs are not the traditional nursing graduates. Associate Degree Nursing graduates entered the program

with deficiencies in reading skills. During the two year period they became accustomed to the terminology used by instructors who are aware of their needs. Some graduate with the necessary knowledge but have problems demonstrating that knowledge on the "Board" because they still have not mastered the reading skills to the degree necessary to successfully write the State Board Test Pool Examination (complete and pass the test).

The State Board of Nursing examinations measure minimal competencies, therefore, graduates from all basic nursing programs (diploma, baccalaureate, and associate degree) take the same examinations. Associate Degree graduates, who may still have problems with basic skills, are expected to complete the examination within the same time frame as graduates who probably rank higher in basic skills.

In conclusion the following recommendations are made:

1. The reading rate of students should be increased as a measure to enhance ability to take licensure examinations.

2. An assessment of the basic skills, or functional literacy, of health care students should be made prior to actual enrollment into health programs and action should be taken to remedy deficiencies.

3. Courses in basic skills should be included in the curricula of health programs in an effort to strengthen the academic ability of the student. Courses should include study and test-taking skills.

4. Reading courses offered should include content relevant to the student's area of interest.

5. More research is needed in the area of reading skills and test-taking. Other variables which hinder success in test-taking should be explored.

6. Research is needed to compare the basic skills of student in diploma, associate degree, and bacculaureate nursing programs. This could give some indication as to whether or not reading ability accounts for the difference in state board success between the types of programs.

7. Initiate action which would result in a reading test given prior to the actual licensing examination. The results of the reading test would not affect the passing or failing of the licensing examination but would allow a comparison of reading skills, at the time of examination, between examinees who pass the examination and those who fail.

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BILINGUAL EDUCATION AT THE COMMUNITY COLLEGE AND FUNCTIONAL LITERACY

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"Basic skills programs are now almost a given in the curricula of postsecondary institutions; however, the key concern of those doing research in the basic skills area is are they working? The question can be answered in two ways: yes, those involved in and committed to those programs are 'working' very hard; no, the programs themselves are not 'working' very well, or, more accurately, a dearth of empiracally based evaluation research on these programs makes the question moot." Basic Skills Programs: Are They Working? Grant and Hoeber, 1978.

The majority of the proponents of Basic Skills Programs, including critics, acknowledge that community colleges have accepted the commitment to developmental education, but nearly all observers claim that they are not doing it effectively. Of 225 institutions that applied to participate in a National Project: Alternatives to the Revolving Door, only four of the ten selected as having an exemplary opendoor program were community colleges; the others were four-year colleges.

Critics point to the failure of community colleges to provide the best possible education commensurate with students' needs, efforts, motivation and ability. They maintain that the high mortality rates are caused by the lack of individual learner orientation, the failure to install positive self-concepts, poor teacher preparation, inadequate and ineffective counseling, poor selection of courses, inflexible schedule, and lack of faculty advising.

Several researchers now conclude that a student poorly trained in basic skills will be a higher risk student than the student who merely performs poorly on an ACT examination. In fact, Mulka and Sheerin point out that a lack of basic skills for successfully achieving the benefits of higher education is a far more critical barrier to educational opportunity than any other single factor. (1974, p. 145)

Hodgekinson, former director of NIE, cited from a recent study that 50 percent of college professors surveyed believe that today's student is less well prepared than a student in the past in humanities, social sciences, mathematics, science and reading. Sixty percent (60%) feel that students are less well prepared in writing.

In her 1976 study, Patricia Cross found that almost half of the college instructors surveyed believed that elementary and secondary schools were to blame for the low achiever's major obstacles in higher education. Various studies have documented a dropping off in the quality of high school graduates now entering postsecondary education. One report indicates a decline of 10 points in the verbal score and 8 in the mathematics score on the ACT in one year, the largest single decrease for any single year since the decline began in 1963 (College Entrance Examination Board, 1975).

L.A. Munday feels that the decline in the ACT scores results not so much from a decrease in the number of high-scoring students as from an increase, particularly between 1970 and 1974, in the number of students scoring low in the 1-to-15 standard score. Further, Munday concludes that his finding is attributable to a larger number of low-ability women planning to attend college in 1976.

The presence of basic skills programs in postsecondary education is not merely a matter of claiming that students are less well prepared; in fact, changes in institutional policies have had a massive influence on the types of students admitted to colleges.

In fact, how does basic skills programs affect the financial status of the college, accreditation, curriculum, admissions policies, type of personnel to be hired, etc.

Patricia Cross found that 74 percent of the community colleges she surveyed have federal funded programs such as: the BEOG, Supplemental EOG, Guaranteed Loans, NDSL, College Work Study, and all TRIO programs all of which are utilized for low income students. Thus, increased financial sources are received by two-year colleges allowing more low income students to attend college.

Therefore, federal policy has given access to postsecondary institutions for low income students, whom otherwise would have been unable to attend college. Due to their poor academic preparation, some curriculum changes were necessary in the form of basic skills programs.

Karabel reports that "fully one-third of all students entering higher education do so through two-year schools, in California, the figure increases dramatically to 80 percent. Since the highest percentage of open admissions institutions in postsecondary education are two-year colleges, it is not surprising that these institutions had to confront the need for basic skills

programs much sooner than did the senior institutions."
Basic Skills Programs: Are they Working? Grand and Hoeber, 1978.

Just because of the community college open door philosophy and providing financial aid for the so called high risk student, it is simply not enough to insure that these students will excel and will continue on to the university level, or will have the basic skills for functional and meaningful employment upon graduation from a two-year institution.

Patricia Cross believes that very little of what we do now in education has been validated through research (1976). Edmund Gordon refines Cross' assertion by noting that, despite the proliferation of compensatory programs in postsecondary education, there has been very little validly conducted evaluative research on basic skills programs. (1966; 1975; 1976a) Grant and Hoeber.

Due to the limited research and the recognition of the needs of the bilingual population at community colleges throughout the country and because the multicultural setting of our institutions, research priorities should be established first on the basis of areas of priority to the bilingual/bicultural groups, and, secondly, for investigation within the entire community college enrollments, a balance between basic and applied research should be maintained. All research should reflect the immediate concerns and needs of the bilingual community wherein the investigation is to be implemented. An ideal research study would involve the bilingual community in a survey of its needs.

Research in the area of biculturalism has two dimensions: 1) consciousness raising for the general public, and for those of us interested in changing opinions and modifying, particularly for those involved in making policy decision, and 2) synthesizing the feelings about the merits of bilingualism for a multicultural society. All research should assist with an understanding of the different student populations for whom educational programs are being structured and designed without any attention to their literacy level; nor the thinking of initiating a developmental research to better the educational delivery for all bilingual populations.

The purpose of this draft is to provide explanatory information in the area of Bilingual Education, some federal experience and a focus on: 1) Community college literacy and basic skills programs background; 2) teacher preparation; 3) depository system; 4) manpower utilization in training programs; 5) long-range planning and management; 6) brief bilingual and funding history. (appendix)

TEACHER PREPARATION

I. Needed Research:

To determine the effectiveness that teacher training in bilingual education has on students, programs and the community.

II. Questions to be considered:

1. What are the learning, cognitive, social and motivational patterns of minority students? What are appropriate teaching strategies? Materials? How can these be incorporated into teacher training programs? What can be done to retain bilingual teachers and monolingual teachers? What teachers training needs to be done in curriculum development for bilingual - bicultural programs? How can culturally relevant materials be integrated into the total curriculum? How much should be included? How, when and where is a bilingual approach most effective in teaching writing, reading and math skills? What are different teaching strategies for students predominately spanish-speaking from those in a mixed linguistic group? What are the requisite methodological or attitudinal skills for teaching in a bilingual classroom?

2. What are the different training models used to train teachers for bilingual education?

3. To what extent are projects employing personnel trained in bilingual education?

4. What are the effects of teacher variables upon student achievement?

5. Community Attitudes: How do they relate to bilingual education? What information do they need about bilingual education, its merits, goals, or services?

6. Schools and Parents: How does a bilingual program foster/inhibit communication between them?

7. Community and Bilingual Education: What roles can community personnel play in the program? How can they assist with the development of curriculum material?

8. How can parents and schools motivate students to remain in schools?

9. What are the teaching styles in the home and in the community as determinants of learning styles?

10. Can a systematic framework be developed and proved effective for coming to know a community structure?

11. Do bilingual programs improve a student's self-concept and sensitivity to culturally different people? Is there empirical evidence noting the benefits of bilingual education or of being bilingual? How can it be intergrated into the educational mainstream?

III. Rationale:

In section 723(A) of the Bilingual Education Act a provision is designed (1) to prepare personnel to participate in, or for personnel participating in,

the conduct of programs of bilingual education, including programs emphasizing opportunities for career development, (2) to train teachers, administrators, paraprofessionals, teacher aides, and parents,...

Whatever methodology is utilized, it must take into consideration the distinct and different linguistic styles of the students both in terms of deficiencies and of challenge. A tremendous amount of specialized training and additional expertise has been found to be needed in areas of bilingual (Spanish-instruction, and the instruction in the special language and cultural characteristics of the students).

There are approximately 100 teacher training programs for bilingual education funded through Title VII of ESEA. Each program has been designed with objectives which reflect the needs of the schools and students of each community. The scope of the programs also range from training leading to a bachelor's degree to in-service non-degree and graduate level programs. However, there is not one program training community college personnel, nor addressing the bilingual student needs for two-year institutions.

There is a vital need to examine the approaches used by institutions of higher education in their attempts to produce qualified educators in the field of bilingual education.

In order to determine the impact of teacher and teacher aides in training in bilingual education on students, program and community, the following questions need to be addressed of the trainees as teachers in the field:

1. How do Chicano students learn Spanish? What are the implications for program design, content, material and teacher training?

2. Does a Chicano dialect (or distinct linguistic style) exist or is it the result of learning English mixed with the nature language of Spanish?

3. What are the processes involved in switching from one language to another?

4. How are Spanish and English used by Chicanos? By whom? In what context? With what proficiency? In essence, what are the characteristics of community speech and what are community attitudes towards these characteristics? For example, what are parental expectations of what should constitute language learning in the schools? What form of the language should be used? For that matter, which language should be taught?

5. What are the attitudes to learning Spanish of Chicano students and parents, and for non-Chicanos?

6. Instruments need to be developed for evaluating and monitoring Spanish and English speaking skills. (Assessment of language competence.)

7. Does a second language interfere with the continued development of one's first language?

8. What is needed for language maintenance? What can an educational system do to maintian both languages?

9. Is more intellectual ability required to master two languages than one? How well do teachers use their languages in their teaching?

The range of studies proposed will address the broad question of what models are being used by teacher training institutions to train bilingual teachers, who is doing the training, and what are the effects of different types of trained teachers upon student achievement in bilingual education.

DEPOSITORY AND REPORT SYSTEM

I. Needed research:

Develop a depository and a uniform reporting system for obtaining project characteristics data, cognitive achievement data, and affective data from Title VII projects. The system is designed to generate aggregatable data in cognitive and affective areas.

II. Questions to be considered:

1. What impacts are bilingual programs having on students' functional skills?

2. What types of programs are most effective, cognitively and affectively, for students with different levels of language proficiency?

3. What are the characteristics of community college bilingual programs?

4. What impacts are bilingual programs having on students' affective development?

5. What types of instructional methods are most effective in terms of impact on cognitive achievement and affective development?

The "Depository and Report System" is designed to permit and facilitate programmatic research in the Instructional Area Components:

I) Language/Program Organization,

II) Parent/Community Roles, and

III) Teacher Training.

The purpose of the "Depository and Report System" is to provide meaningful aggregatable cognitive and affective data about students in bilingual education programs for the purpose of assessing the impact of bilingual programs and determining the characteristics that make for successful programs.

The initial priority will be concerned with 1) developing the Project Characteristics Form and 2) developing the impact models that will generate aggregatable achievement data and still allow projects wide latitude in selection of assessment instruments. The need for aggregatable data is considered to be urgently needed. In addition, these data will provide important guidelines to the planning and conduct of different types of bilingual education projects at different community colleges throughout the country.

III. Design

1. Developing the basic skills models that will generate aggregatable data;
2. designing the Reporting System, including necessary procedures and forms for use by all bilingual programs;
3. developing of the projects characteristics instrument;
4. revising and finalizing the DRS System;
5. creating the data base;
6. performing developmental studies;
7. collecting on-going data from all bilingual programs;
8. conducting formal research studies.

MANPOWER UTILIZATION IN TRAINING PROGRAMS

I. Needed Research:

Perform a cost-benefit study of the bilingual education teacher aide training to determine the value of the benefits being derived from these developmental programs.

II. Questions to be considered:

1. What has been the effect of the teacher aides training and manpower needs in bilingual education at the community college level?
2. What are the strengths and weaknesses of existing programs?
3. Can cost-benefit models be developed to study the existing and longer-range training needs within bilingual education.
4. What are the "actual" contributions and arrangements made by community colleges for bilingual education training programs?
5. What lines of communication, cooperation, collaboration, flow of personnel occur between community colleges, vocational schools or programs, adult education centers or programs, handicapped programs, and university training centers?

III. Rationale:

Bilingual education formal teacher training programs are presently being supported at 101 institutions of higher education. Also, 625 graduate fellowships are awarded annually to students working toward the M.A. and Ph.D. Degrees. These two programs are mandated by the Bilingual Education Act, with $13,000,000 spent annually on bilingual education teacher training programs and $4,375,000 on graduate fellowships.

LONG RANGE PLANNING AND MANAGEMENT

I. Needed Research:

Determine the types of organizational approaches and institutional cooperation required to facilitate accomplishing the goals of bilingual education according to the bilingual office guidelines relative to monitoring, long-term management, planning and budgeting.

II. Questions to be Considered:

1. What are the unmet needs of projects for research information and technical assistance?
2. How can we design a multi-agency service delivery system for bilingual projects?
3. What level of relationship exists between agencies in the network of Bilingual Education Centers and community colleges and what needs to be done to facilitate cooperation?
4. What level of funding is characteristic of certain community colleges in Title VII, projects, and what level of funding is necessary for certain types of successful projects in two-year institutions?
5. What type of technical assistance is provided to community colleges from the Title VII office?
6. What is the financial distribution between university programs and community colleges considering the student populations of both institutions?
7. How do Title VII personnel (directors and staff) receive necessary training for performing their jobs?

8. What is the best way to disseminate programmatic research findings for use in the field?
9. How should the increasing R & D capability be developed to promote the flow of programmatic research to the field?
10. What is the best way to establish a community college unit within OBE?

The proposed studies derive from a concern to increase the current level of coordination efforts between agencies and centers concerned with various service-delivery aspects of bilingual education, as specified in part C of the Bilingual Education Act, and the interest of the writer for a better delivery of bilingual education at all levels, particularly at the community college setting.

The Commissioner of Education and the Office of Bilingual Education are responsible for various aspects of research on bilingual education. Programmatic or policy research is seen as the responsibility of the Office of Bilingual Education (OBE).

III. Design:

The OBE Director should authorize a series of studies, needs surveys, planning documents to meet community college needs. Recognizing that it will be many years before an adequate number of teachers are trained to teach the target populations, and that it will be necessary for bilingual education programs in most schools to depend upon in-service training for teachers who are already teaching bilingual programs, and further recognizing that in-service training is also necessary for teacher aides who are recruited from the community

to assist in bilingual programs, the conferees recommend:

1. An Establishment of a Service Center for Pre-Service and In-Service (Teacher-Aide Training Center) Teacher - Aide Training. This Resource Center should be degree oriented, towards an AA for para-professionals who would then be prepared and certified and equipped to assist in bilingual programs in specific languages, and specific settings.
2. The proposed Service Center should be located close to but outside of a University, but should be organized as a "mobile" resource which can provide curriculum programs, teaching materials, and guidance to community colleges organizations with proven expertise to provide the in-service training to teacher aides at the local level. In addition, the proposed Service Center should develop and offer short-term training programs on-site at the Center and/or at the local level for summer credit programs.

It is known that the current teacher-training programs provided through in-service teacher-training under the 15% mandated in each, LEA project is ofter inadequate, ineffective, and difficult to arrange. Because current in-service training programs are often located many miles from the LEA, transportation difficulties and time factors make it impossible for many teacher-aides to take advantage of the opportunity for further training. By emphasizing the need at the local level and directing educational assistance in a degree program toward the local teacher-aide, and by offering the assistance through a local community college, the LEA's will be able to make better use of this federal teacher training assistance. In addition, many more qualified bilingual education specialists will be developed.

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APPENDIX

BILINGUAL EDUCATION

Brief History

Bilingual education is not a new concept, even in the United States. Being trained to speak, read, and write in two or more languages has been the mark of an "educated" person for many centuries. Switzerland and other European nations with mixed language and culture have had bilingual education for many years. In the United States, however, the concept of using bilingualism in the public schools is comparatively new. Early programs (not federally funded) include:

Coral Way School, Miami, Florida: started in 1963 for all children in grads 1 - 3, Spanish-English. A successful program, it is considered a "Model" for others.

San Antonio Independent School District and United Consolidated School District of Laredo, Texas: started in 1964 for Hispanic and English-speaking children. Testing indicated children in bilingual program did better in mathematics after several years than those in monolingual program.

Webb County, Texas: started in 1964, with all children in the school in the bilingual program. One grade added each year. Resulted in Anglo parents moving into the school district to "gain the educational advantage."

Federal Effort

National Education Association Meeting: Largely through the pioneering work of Henry Oyama (Pima College), Adelberto Guerrero (U. of Arizona), and Maria Urquides (Tucson School District), this meeting was held in Tucson, Arizona in 1966 to discuss the problems of teaching "other language" children through bilingual education. Teachers present reported on the high numbers of drop-outs, grade-slippage, children being consigned to classes for the retarded, and the general failure of minority language children to meet the challenges of functional literacy in order to qualify for post-secondary education or even for a job. The meeting pledged to build "bridges of understanding" and to work for bilingual programs wherever possible.

Two national legislators -- Senators Ralph Yarborough and Joseph Montoya -- were present at the NEA meeting. They returned to Washington to draft the Bilingual Education Act, which became Title VII of the Elementary and Secondary Education Act. As passed, the program provided for federal assistance to schools which developed a demonstration program of bilingual education. The bill passed in 1968, as part of the Elementary and Secondary Education Act (Title VII, ESEA).

Title VII, Bilingual Education Act

Programs developed under this law varied in concept, in goal, in methods used, and in target population served. Under the original legislation no program could be funded for longer than five years. Because funding was low, with resulting competition for support, most programs were not funded for the full five years. It was thought that local school districts would pick up the cost after federal funding was completed. However, since the target populations, especially in the Southwestern states, were frequently in low-income or poverty areas, the school districts seldom were able to continue programs after federal funding stopped.

Funding and participation - 1969 through 1977:

Year	#Projects	Children Served	Appropriation
1969	79	26,500	$ 7,500,000
1970	131	51,900	21,250,000
1971	165	83,700	25,000,000
1972	210	106,000	35,000,000
1973	209	129,500	45,000,000
1974	380	236,000	58,350,000
1975	381	268,500	85,000,000
1976			97,770,000
1977	514	235,878	115,167,000
1978	565	254,713	135,000,000

The ESEA amendments of 1974 for bilingual education (Kennedy, Cranston, Montoya) made significant changes in program scope, purpose, and definition of children in target population:

1. Removed five year limit.
2. Encouraged projects at preschool, elementary, secondary levels.
3. Obliged Commissioner of Education to disseminate information on models, pupil-teacher ratios, teacher qualifications, etc.
4. Focused on training programs for teachers, in addition to the training activities in each program. Provided a formula on how funds were to be allocated for projects and teacher-training. ($16,000,000 of the first $70,000,000 plus 1/3 of all over $70,000,000 to go for training).
5. Provided for graduate and undergraduates fellowships and special training programs for teachers, administrators, paraprofessional teacher aids.
6. Provided for bilingual education programs for Indian children on reservations and off.
7. Mandated an "Office" of Bilingual education, an assessment by OE of number of children in target population, number of Indian children, and other studies. (authorized but not funded)

State Efforts

Several states -- particularly those with heavy concentrations of minority language children -- have enacted state bilingual laws. There is a wide variety among state programs, as there is in Title VII programs. Massachusetts was the first state to mandate a bilingual education component for any school district where more than 20 children with the same minority language background attended school.

Lau v. Nichols, Supreme Court Decision

In 1974, the Supreme Court ruled that public school systems must rectify the education problems of children with limited ability to speak English. The Court based its decision on Title VI of the Civil Rights Act of 1964, and held that a school system receiving Federal funds unlawfully discriminates against children when it fails to cope with their language problems.

Proponents of bilingual education have interpreted this to mean that children have the "right to be educated in a language they understand." Opponents often interpret this ruling to mean that children must be "taught sufficient English to make it possible for them to continue their education in English".

The target populations are at a point of disagreement. With the Title VII program funding, it has awarded funds to projects in 44 different languages. Many educators feel that the limited funds are over-diluted by attempts to "be fair", covering many languages in what it essentially an experimental program.

The National Center for Educational Statistics did a sample survey in 1975 (mandated in the 1974 amendments) to identify "minority language" citizens, and to locate them geographically. Some of the results of that survey are:

Persons living in households where language other than English is spoken:

Spanish:	10 million (3.8 million children)
Italian:	3 million
German:	2 million
French:	3 million
Chinese	.5 million
Japanese	.5 million

Of households where the "other" language is ONLY language spoken, 3/4 were Spanish-speaking homes.

Of the total population age 4 to 18 (school ages), 7 percent speak a language other than English.

The five Southwestern states have a total of 6,439,000 Spanish speaking citizens, according to this survey. (total nationwide 11,202,000)

There is wide disagreement about the accuracy of these figures, with most Hispanics claiming they are too low.

The Title VII programs have only provided assistance to about two percent of those "other" language children who are the legal target population (limited English speaking). This makes it impossible to assess the impact of bilingual education realistically, of course.

Teacher Training Statistics, Need, Problems

Bilingual education is a special kind of teaching. Because it is a relatively new program, there were very few trained teachers when the federal program first became law. Federal funds were not high, and there was little money to develop teacher training programs. Very few universities or colleges were able to offer courses in bilingual education teaching.

The 1974 amendments provided a percentage of federal funds to support training at three levels:

INSERVICE: Training for teachers who were already teaching bilingual programs or training for teacher aides (usually parents) who spoke the minority language but had not been trained as teachers. Inservice training has usually been short-term, and part-time. IT IS NOT REALLY TEACHER TRAINING.

UNDERGRADUATE: Training for college students who are studying to be teachers. This has been both partial and full bilingual teacher preparation, depending on the facilities of the college or university and upon the teaching plans of the student.

GRADUATE: The law provides for fellowships to assist graduate students while they prepare for teaching bilingually. These students are frequently teachers who have returned to university in order to prepare for a career in bilingual education.

Bilingual education teachers should not be lumped with teachers who are members of minority groups but have not been trained to teach bilingually. Most minority groups quote statistics about the need for increases in the numbers of teachers in their own group. Spanish-surnamed students in an Office of Education survey in 1974, for instance, totalled 2.3 million; Spanish-surnamed teachers totalled 22,800. There is one teacher for every 22.5 American children; however, there is one Spanish-surnamed teacher for every 107 Spanish-surnamed children.

The number of teachers who are trained to teach bilingually is much less -- yet the Office of Education estimates the need at 60,000 to 63,000.

A further distinction which should be made is that between teacher aides who have received several weeks of inservice training or teachers who have received part-time or short-term bilingual teaching courses on an inservice program. These are emergency teaching solutions to handle the current shortage -- to fill the need until sufficient numbers of qualified bilingual education teachers can be trained.

The attached sheet of statistics indicates the serious need for better statistics, a survey of teachers according to their specific qualifications,

and the need for increased teacher training programs.

STATISTICAL INFORMATION

Who needs bilingual education?

The NCES Survey of 1975 counted persons living in households where a language other than English is spoken:

Language	Total	Children 4 to 18
Spanish	10 million	3.8
Italian	3 million	.65
German	2 million	.58
Greek	.48 million	.12
French	2 million	.62
Chinese	.5 million	.12
Japanese	.5 million	.12

In surveying persons in households where the minority language is the usual household language:

. Spanish 4.8 million with 1.8 million children.

THIS IS NINE TIMES THE NEXT LARGEST LANGUAGE GROUP.

. Of those persons living in households where the only language spoken was a minority language, 3/4 (75%) were in Spanish speaking homes.

. Of those groups which speak non-English as a usual language, Spanish is the largest, with 41 percent of the Spanish-speaking population in that category.

Although other minority language children need bilingual education just as much as do Spanish-speakers, the size of the Spanish-speaking group makes it the most sensitive target group, both from a practical standpoint of funds and from a political standpoint.

Why is bilingual education necessary?

The statistics on educational achievement, grade retention, and job-holding capabilities are what originally motivated educators to experiment. Any assessment of the success or failure of bilingual education should be made with that in mind. When we say a bilingual program has 'failed' to achieve its goals, we must ask "As compared to what? Our ultimate and idealistic desires or what went before?"

The following statistics are from the Office of Education current report 'The Condition of Education 77'.

Percentage of Enrollment in school of various age groups:

Age	English speaking	Non-English	Spanish-speaking
6-13	99	95	96
14-18	91	79	78
19-25	31	20	15

Percentage reading below grade level (2 grades)

Grade	Total population	Spanish-speaking	English-speaking
1-12	12 percent	24 percent	12 percent
1-4	9	17	9
5-8	12	24	12
9-12	14	37	14

Percentage of population not in high school and not high school graduates: Age 14 to age 25

Total Population	English as home language	Spanish home language
10.1 percent	9.8 percent	26 percent

This drop out rate both at the high school and college level is translated into dollars which do not come into the Hispanic or other minority language

community:

Expected Lifetime income		Unemployment Rate 1976	
8 years of school	$221,000	24%	less than 8 years
		13%	8 years
Some High School	$243,000	14.8%	
High School graduate	$286,000	8.1%	
Some College	$341,000	6.5%	
College graduate	$424,000	6.4%	
Post graduate	$487,000	3.1%	

OTHER FEDERAL PROGRAMS DIRECTED AT LIMITED ENGLISH LANGUAGE SKILLS :

- Emergency School Aid Act, Section 708C: funds bilingual programs to some extent.
- Vocational Education, Bilingual Vocational Training (Part J). This program has been funded through Title VII, although technically within VEA. Senator Tower (staff member Dave Martinez for education Hispanic issues) is the author of Part J bilingual vocational education. Funding is very low.
- Civil Rights Act, General Assistance Centers (Lau). These centers help local school districts and states to comply with requirements of Civil Rights Act following the Supreme Court decision in Lau Vs. Nichols.
- There are also small bilingual components in Library Aid, and several other peripheral assistance programs.

A LOOK AT COUNSELING AND GUIDANCE IN PROMOTING BASIC SKILLS INSTRUCTION IN THE COMMUNITY COLLEGES

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COMMENT

It is my personal conviction that the process of education is highly important to the mobility of each person regardless of the type of mobility, e.g., economic, political, social, geographic, or physical.

The "disadvantaged" person needs a firm foundation in basic skills in order to cope with the larger society of today as well as that described by futurists. I believe that the community college can play a big role in providing the required life-coping basic skills.

This effort is essentially a combination of concepts and perceptions at Sacramento City College as seen through the eyes of its chief administrative officer. Its realism and simplicity may be shortcomings to the interests and needs of educational researchers; however, my reward is to isolate a few concerns and share them with other institutional leaders. Together, we can move the "disadvantaged" to an "advantaged" status through the educational process found in the community college.

CREED

A creed of the value of education states (Higher, p. 7):

> "Equal educational opportunities for all persons, to the maximum of their individual abilities and without regard to economic status, race, creed, color, sex, national origin, or ancestry, is a major goal of American democracy. Only an informed, thoughtful, tolerant people can maintain and develop a free society."

During the past 200 years, American democracy has had several interpretations.

The 1970's and 1980's are described by Havighurst (p. 13) as an era of constructive pluralism. This essentially means:

1. "mutual appreciation and understanding of every subculture by others,"
2. "freedom for each subculture to practice its culture and socialize its children,"
3. "sharing by each group in the economic and civic life of the society, and"
4. "peaceful coexistence of diverse lifestyles, folkways, manners, language patterns, religious beliefs and practices and family structures."

INTRODUCTION

The community college, as a social institution that has been described as unique, significant, dynamic, and challenging, is continually being tested as to its capability and capacity to be flexible enough to meet identified community needs and desires, effectively as well as efficiently. The impact of limited resources, growth of competing and controlling organizations, rapid technological change and shifting populations is increasingly addressed by community college officials. More recently, the impact of the Supreme Court decision on the Bakke case and the public vote on Proposition 13 makes it necessary to review our commitment to the philosophy and principles of the community college.

What happens to "access"? What impact is felt on "equal educational opportunity"? What institutional commitment exists for quality instruction in quality programs? What can be done to preserve community-based programs? These are some of the fundamental issues that need to be addressed.

It is clearly evident that the community college cannot be "all things to all people" as expressed by wants and needs of community members.

On an institutional scale, the issue of basic skills is a fundamental concern. The issue needs to be analyzed and interpreted for institutional direction and commitment by the college staff.

In this article, basic skills are defined and analyzed. The disadvantaged community college student is studied briefly in relation to his need for basic skills. Then, the counseling role is interpreted in terms of the disadvantaged student. A summary of relationships is continued in the section on "The Future".

SOME PROBLEMS

A. DEFINITIONS

It appears that communications can be improved through a consistent definition of terms that are accepted and understood by users. Some examples follow:

1. Basic Skills

The Encyclopedia of Educational Research cites the basic skills as "tool subjects". These cover reading, mathematics, English composition (writing), speech, listening, handwriting, and spelling.

Monroe (1972, p. 35) writes that minimum levels of skills are required in the following: reading, writing, mathematics, language, general knowledge, work habits, and motivation.

Hashway and Nuttall (1977, p. 5-6) show a matrix listing lower order basic skills as follows: speak English, compose a sentence, use dictionary, whole numbers, fractions, percentage and algebra (among a list of 34 identified skills).

The Roveche-edited Increasing Basic Skills does not define the basic skills although it addresses itself thoroughly to instructional and student support for developmental studies. Does this mean that developmental studies are synonymous with basic skills or enhance basic skills?

In my view, the basic skills encompass those skills required to cope with the daily life routines of our general society. Such skills are often called essential skills, remedial skills or developmental skills. More specifically, in the community college, these include (1) reading, (2) writing, (3) speech, (4) listening, and (5) arithmetic. Personally, I refer to these basic skills as college survival.

2. Counseling and Guidance

The Encyclopedia describes counseling by faculty as faculty advising. When counseling is performed by psychologists, it is called psychological counseling. When the subject is concerned with jobs and occupations, it is vocational guidance. Emotional and social reactions require personal counseling. Depending upon who and what, counseling can be guidance as well as advising.

The Encyclopedia (p. 254) defines counseling as:

> "a professional relationship between a counselor and a client in which the counselor helps the client to understand himself and his life space in order to make meaningful and informed choices consonant with his essential nature in those areas where choices are available to him."

The American Council of Education, as stated in Monroe (1972, p. 165), defines counseling as being "concerned with assisting the student (1) in understanding and evaluating his potentialities and limitations," and (2) "in discovering and developing ways and means of working out his problems and taking full advantage of his opportunities."

In a community college, counseling and guidance includes (1) academic planning, (2) career guidance, (3) personal counseling, and (4) study skills development. Can such be gleaned from the aforementioned?

3. Disadvantaged Student

In applying for external funds, the term "disadvantaged" is often read. It appears to indicate, depending upon the perception of the reader and writer, different students.

Cultural disadvantages exist. They result from the recog nition of the many cultures in a multicultural society.

Economic disadvantages occur at the lower rungs of the socio-economic ladders. Financial aids--including grants, loans, and scholarships--have served as a buffer against these disadvantages.

Educational disadvantages have arisen from a variety of sources. In essence, a disadvantaged student is unable to cope with the essential skills required to survive courses of instruction in a community college. In some cases, the student is disadvantaged due to inability to take notes, to allocate time wisely, to listen carefully, and lack of many other skills. These are essentially college survival skills which are commonly called basic skills.

It has so often been my experience to hear the term disadvantaged student, equated to minority student, ethnic student, the slow learner, the mentally retarded and others. In my vocabulary, the term is used to identify the educationally

disadvantaged student. Color, race, creed, sex and other criteria do not enter into such a definition.

More precise terms would be of considerable help in improving communication. There is a need for a common understanding of the terms basic skills, counseling, and disadvantaged.

B. COUNSELOR - WHO AND WHAT?

In the community college, a counselor plays a significant role in the academic and personal success of students as they progress through their instructional programs; however, with the continual impact of limited resources on the institution, the counselor will need to reassess his role and responsibilities to the college.

Will it be enough to have counselors assisting in the choice of curriculum, courses, and vocations? Or, for them to assist in helping the student discover inner strengths and weaknesses?

Monroe (p. 170) states that counseling the whole student is essential and that such services should be available to all students. In addition, students should know that counseling services exist and that they are welcome to avail themselves of such services. However, Monroe (p. 36) also notes that the counselor and guidance personnel are the most neglected within a community college. The criticism, as he states it, is that the faculty often regards counseling as "baby sitting" or "spoon feeding" of students and unnecessary--even detrimental since they humor and support the lazy, incompetent students.

In the typical community college, what functions do counselors fulfill?

Monroe (p. 157) lists functions according to the following functional relationship:

I. Orientation

1. Pre-college information
2. Student induction
3. Group orientation
4. Career information

II. Appraisal

5. Personnel records
6. Educational testing
7. Applicant appraisal
   a. Health appraisal

III. Consultation

8. Student counseling
9. Student advisement
10. Applicant counseling

IV. Participation

11. Cocurricular activities
12. Student self-government

V. Regulation

13. Student registration
14. Academic regulation
15. Social regulation

VI. Service

16. Financial aids
17. Placement for employment

VII. Organization

18. Program articulation
19. In-service education and staff
20. Program evaluation
21. Administrative organization

Some methods used by counselors with students as covered in Encyclopedia (p. 215) are as follows: (1) advice, (2) teaching, (3) interpretation, (4) clarification of thought, (5) exhortation, (6) conditioning, (7) sympathy, (8) referral, (9) consultation, (10) case study, (11) psychological testing, and (12) group.

Typically, in a community college, counselors use a direct approach as well as a non-direct approach. The former involves the use of objective data by a counselor to solve a student's problem. In the latter, the counselor reflects on the student's feelings, clarifies the points made, and remains relatively passive, i.e., listens as a participant.

When educators continue to discuss educational options, such as vouchers, alternative schools, community-based problems, where is the fit for counselors in the system? As stated by Upton (p. 69), counselors may become an endangered species, to be wiped out in favor of a faculty advisor, a paraprofessional, or a community volunteer.

Upton (p. 69) comments that guidance personnel are at the apex of a financial squeeze in that guidance is not a legally mandated program for funding. She continues by stating that counselors have no power base, i.e., no political strength. Furthermore, the image of counselors is poorer than poor. Upton worked on the legislation for Reform of Intermediate and Secondary Education (RISE) in 1976 and learned that few persons indicated any need for counselors. Counselors were viewed as schedulers, program changers, and as "ineffective."

C. COMPETENCIES IN BASIC SKILLS - WHAT AND WHICH?

The basic survival skills in a community college require our considerable attention.

At Sacramento City College, it is estimated that 40% or more of our students require some help in basic survival skills. To validate the estimate, a college assessment center has been created to assess each incoming student who has not accumulated college units. For those who do have college units, assessment is a voluntary act. Clark and Ammons (p. 16) recommend that any testing for the disadvantaged student include those to measure emotional states and attitudes. We are looking for such tests.

The assessment data is provided and interpreted to the student. What the student does with the interpretation is his prerogative in that the college has made the data and its interpretation available for a purpose; that is, to encourage the student to motivate himself to succeed in those course sections that have been designed for his or her level of ability. Inherent in this process are several problems.

What will continually stimulate the student to want to succeed?

Monroe (p. 389) states that the high school will continue to succeed in reducing its graduates who are functional illiterates; that is, those who are unable to cope with the skills necessary for a minimal level employment; however, they will continue to pass on to the community college those who require special counseling services and opportunities in the basic skills of reading, speaking, writing and mathematics. Monroe (p. 389) points out that most of the remediation will occur

in independent study settings assisted by tutors. The students will be working in laboratories equipped with audio-tutorial media.

Individualizing the effort is a reasonable way to effect college survival. Various ways of individualizing instruction are expressed in the 1976 edition of Current Issues in Higher Education. However, individualizing college survival skills is a "hard road to go" for community colleges unless differentiated staffing exists with a clear understanding of its tenure implications noted. Unless it can be shown that individualizing instruction is cost effective and highly motivational, it will be most difficult to be adopted, especially for the disadvantaged student.

At Sacramento City College, we have embarked on an integrated instruction-counseling approach to college survival. These basic skills are addressed through PROJECT HELP.

D. THE DISADVANTAGED - WHO AND HOW?

Studies of the disadvantaged show uncommon characteristics that tend to label them "high-risk." Some of these characteristics show that they tend to come from families without a college background, have a problem with motivation, and show emotional problems that undercut their self-confidence.

Monroe (p. 36) states that his studies of college failure show a lack of motivation to be more important than a lack of intellectual ability. Furthermore, (Monroe, p. 108) the emotionally depressed disadvantaged student tends to be so passive and non-motivated that she fails to seek help from instructors as well as counselors. This student

expects overt, direct guidance even to the point that counseling becomes a compulsory experience for her.

A study (Monroe, p. 108) of reading levels of disadvantaged students tend to report consistently the same degrees of incompetency to read with understanding.

My educational experience suggests that it is not surprising that students who have given up hope are disadvantaged. To get these students back into an educational "mainstream" for mobility requires the community college to overcome some of the student's frustrations which had been built over the years by the school's demands and its repeated punishments (and lack of rewards). Berg's study indicates that the present community college programs have little relevance to the realities perceived by the disadvantaged ethnics.

The disadvantaged has very little solace from those instructors with an elitist view that suggests hostility or disinterest. On the other hand, counselors have taken a deep interest in general to the disadvantaged, even to the point of cautioning them about their unrealistic objectives; however, the disadvantaged often prefer the risk and, subsequently, becomes more hostile and frustrated then before entering college.

How instructional programs have helped the disadvantaged requires considerable study. Roveche (1968, p. 47) states that there exists a vacuum in this area of research.

D. ETHNICITY AND THE DISADVANTAGED

The disadvantaged cannot be equated to ethnic minority; however, a sizable group of disadvantaged represent ethnic minorities.

As described by Havighurst (p. 5), cultural pluralism has become a popular phrase to describe racial and ethnic relations. It serves as an umbrella under which minorities can preserve their identity and protect their lifestyles. Cultural pluralism implies a diversity of cultures or subcultures.

When counseling or working with disadvantaged, it could be helpful to consider the following chart developed by Havighurst (p. 12):

RELATIVE IMPORTANCE OF SOCIAL CLASS AND ETHNICITY IN SUB-CULTURES OF THE USA

Social Class	Ethnic Group				
	Jewish	Black	South/East European	Oriental Japanese/Chinese	Spanish Origin
Upper Middle	E ⟩ C	C ⟩ E	C ⟩ E	E ⟩ C	C ⟩ E
Lower Middle Upper Working	E ⟩ C		E ⟩ C	E ⟩ C	
Lower Working		E ⟩ C		E ⟩ C	E ⟩ C

C ⟩ E, social class more influential than ethnicity

E ⟩ C, ethnicity more influential than social class

Evidence is lacking for blank cells.
Data are not available on upper class ethnic characteristics.

In those cases where ethnicity plays a larger role, the counselor, if available, should represent that ethnic grouping for better rapport to be established.

Longstreet comments that ethnicity should be considered in developing personalized learning styles so that learning is encouraged while ethnic

diversity is respected. Even though such consideration should be given, it is a blight that current in-service training on a large group of Southern California teachers has had virtually no impact on thoughts and behaviors pertaining to the growth of minorities (Cross and Deslonde).

SUMMARY - THE FUTURE RELATIONSHIP

On a global scale, the scramble exists for scarce resources--water, food, air, and space. The world problems of starvation, overpopulation, environmental pollution, and atomic radiation will probably persist and thereby overshadow our concerns within the community college.

The community college, however, will continue to be impacted increasingly by limited resources, rapid technological change, growing bureaucracies and population shifts. The limited resources will undoubtedly present the toughest block to institutional survival.

The traditional "open door" community college, with its base in an identified community (communities), cannot survive as a social institution providing "all services to all community constituents." Limited resources will require us to prioritize our services.

The students, whether they be labeled traditional or nontraditional, are in different phases or levels of readiness to benefit from instructional or student services. Individual differences are becoming increasingly apparent as more of the older population returns for training for a second or third career. Due to the variability in readiness and competencies for college survival, we need to pursue some instructional delivery systems that recognize individual differences. One of those is called "competency based instruction." Whether we can adequately deal with this area of need depends primarily upon the availability and commitment of resources to this high priority.

The counselors are viewed as the "helping hand" in a community college. In such a role, in general, they are seen to be effective; however, in an "era of limitations," it appears that their posture needs to change if they are to continue to be part of the community college scene. One suggested method has been to integrate counseling into a curricular offering. As stated previously, the roles of counselors can be understood clearly if counseling programs, roles, and responsibilities are defined and publicized. Then, accountability for plans and actions exist.

A competency based guidance program to provide college survival especially in basic skills would be one way to demonstrate accountability by counselors.

In summary, I would emphasize that counselors have a large role to perform in the basic skills area; however, whether the role is one of ascendency or not is dependent upon their plans and actions now--since the limited resources available may stretch only far enough to include them for today's tasks.

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COMMUNITY COLLEGES, EDUCATIONAL RESEARCH & DEVELOPMENT, AND FUNCTIONAL LITERACY

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The sequence of terms in the title--with community colleges first, then educational Research & Development, and then functional literacy--creates obstacles for a researcher. In addressing any topic, a researcher by training and disposition likes to start with an abstract concept--functional literacy, for example--then talk about it from the perspective of the Research & Development community--using technical language--and finally end with a discussion of implications for application--with more emphasis on the implications than the application. Since researchers regard application as "somebody else's business."

This pattern worked fine in an era when both education and research were accepted by the public as boundless growth enterprises. But those days are gone forever, and they're not coming back. We all know this. The question is what we're going to do about it.

Educational R&D is so small financially, that there is very little room for reduction of expenses. The community colleges in Los Angeles County alone are losing as much this year financially as organized educational R&D in the country is totally. Trimming can take place only in our ways of handling R&D in education. Such cutting is no more pleasant and popular a task than financial cutting, since researchers become fond of the conceptual models that constitute the chief tools of the trade. Although, I would have found it convenient and comfortable to follow several traditional approaches in considering community colleges and functional literacy, I've chopped them as indefensible R&D alternatives. Because

some people may well feel that what I've cut is essential rather than expendible, I'll be explicit about the cuts before proceeding to set forth what seems to me to constitute a justifiable course of action by community colleges for R&D investment directed to the concern of functional literacy.

Alternative R&D Models

Gee-whillikers Model

This is by far the favorite model of researchers and also the most luxurious. Applying it to community colleges and functional literacy would involve describing the prebreakthrough inquiry that is currently going on in such areas as brain research, psychobiology, artificial intelligence, information science, cognitive psychology, linguistics, sociology, pharmacology, microelectronics, and other such fields. These are intellectually exciting prospects, and at some indefinite future time they will have operational applicability for functional literacy concerns in community colleges. Until that time is reached, all you can do is say "gee-whillikers" and go on about your business. Beyond urging general support for this fundamental research as a matter of professional concern for the long range future, I can't see that this model warrants your further attention.

Pie in the Sky Model

The R&D community in education has been blind to the fact that we have demanded a "pie-in-the-sky-bye-and-bye" faith from the profession and the public as the basis for supporting R&D in education. Applying the pie in the sky model to community colleges and functional literacy would involve surveying the state of the art regarding what is known within the disciplines individually and collectively. This would involve sorting and summarizing the various theoretical orientations and empirical findings. From this survey, I would then conclude that we don't yet know enough about functional literacy, but there are promising leads for a "research

agenda." I would evade any consideration of how and when the agenda would be completed, leaving that to "someone in authority."

I am passing up this route not because of any lack of enthusiasm for it. More research about functional literacy *is* needed. But exactly the same can be said about every aspect of education. Again, the route yields no actionable conclusions regarding *your* concerns and priorities.

Faith and hope are necessary and fundamental aspects of *any* human enterprise. But if we are considering an R&D endeavor, reliance on the pie in the sky model is unjustifiable and misplaced.

Doom and Gloom Model

It is ironic that within the professional lifetime of most of us here, the growth of education generally and educational R&D particularly has relied on the popularization and promotion of failures, weaknesses, problems, and other forms of professional deficiencies. We have been fueled and we have thrived on the doom and gloom model. Applying it to community colleges and functional literacy would involve glorifying the numbers of students entering and exiting community colleges lacking the requisite proficiency for study and work. This is the model that we've assiduously followed at the pre-college level for the past 5-10 years, and it is tempting to extend it to the post-secondary level. The extension is feasible, not reasonable.

Less than Meets the Eye Model

This model is the obverse of the doom and gloom model. It takes the same descriptive statistics, but rather than escalating them into a "big problem" for the sake of generating support, it de-escalates the informa-

tion into a "problem that is less severe than was originally thought and therefore requires no priority attention." This model leads to "savings" rather than "spending," but is no less question-begging and no more beneficial in consequence than the doom-and-gloom model.

Methodology is the Message Model

Researchers don't think of themselves as mindless. However, they often act that way. And when they do so, they usually justify the activity on the grounds of "methodology." Following this model, researchers divide the world into two types of people: methodologists and substantive specialists. A methodologist then pairs up with a substantive specialist and the two work together to solve substantive problems. In applying this model to community colleges and functional literacy, we would talk about such matters as experimental design, statistical analysis, data processing, and rules of inference. We could easily demonstrate that previous study has been woefully weak in all these areas. If you just had the right questions, powerful methodology is available to find the answers--if you use a "good" methodologist. How you generate and determine the right question, how you get from one question to another, and what you do with the answers other than publish them in a report, are left dangling. Again, the model serves the interests of the researcher quite well, but it has not yielded much beyond methodological critiques.

Good Things out there Model

This model holds that the solution to the problem is alive and well and living in a number of places "out there somewhere." All that has to

be done is to search and seek this "good practice" and then "disseminate" it. This model would be appropriate if it worked. Strong data have been collected, internationally and locally, to suggest that it is a product of wishful thinking. Exemplary practices do indeed occur. But the excellence is no more disseminable than is truth or beauty. The fault is not with the intention of the aspiration but in following a fantasy to achieve the aspiration; wishes do not substitute for wherewithal.

Leave it to People Model

This model takes a variety of forms and it's a sure winner every time. In applying it to community colleges and functional literacy, you would do a "policy-oriented study" to examine the situation. What you find, of course, is that there are people involved and that they differ. From this you conclude, "It's people that count; what happens depends upon the particular people involved and what they've done. Therefore only individualized, localized effort can be justified." By this means, weak inquiry becomes strong policy with stultifying consequences for those upon whom the "policy analysis" was imposed.

Can R&D Investment be Justified?

My purpose in setting forth these alternative models is not to persuade you to dismiss educational R&D. Having made them explicit, I recognize that many fellow researchers will have concluded that with a friend like me, who needs enemies. And any reasonable person should be asking "Who needs educational R&D?" The question is a very legitimate one, and deserves serious consideration. Community colleges have received little attention from the educational R&D community in the past. Why not keep it that way?

Neither community colleges nor the R&D community has had much reason or need for closer interaction. Each endeavor has been so occupied with internal matters of growth and with achieving identity and integrity that there has been little time or energy left for other aspects. Community colleges are a young societal endeavor, but organized educational R&D is even younger. As with community colleges, the historical underpinning of educational R&D can be traced back to antiquity. But as an enterprise of any magnitude larger than the unconnected avocational activity of a small number of university professors, educational R&D is still little more than ten years old.

For historical reasons, educational R&D to date has concentrated on elementary, rather than collegiate contexts. The history might have been different, but it wasn't. Researchers in education sprang from academia in the mid-60s with full confidence that they could help the profession and with full naivete about what this involved technically, politically, economically, and socially. Those who "needed the help the most" were viewed to be the sector of the education community furthest removed from the researchers. This meant that effort was on the primary grades with some spillover to the secondary level. Because a good share of educational researchers remained lodged in universities, university education received incidential R&D attention. But apart from the lone and scattered individuals who have pioneered with perservation on priorities and concerns of community colleges, there has been no R&D attention devoted to community colleges. The NIE databook on "the status of education research and development in the United States" includes no mention whatsoever of community

colleges, generically or of any individual community college. The NIE product catalog includes no product for use in community colleges.

It has been the fate of elementary and secondary schools over the past decade to provide a learning context for several national aspirations in addition to their primary mission of educating children and adolescents. There is no question that educational R&D as an organized endeavor received its primary and secondary education in the public schools. As a result of this learning experience, community colleges today in considering R&D and functional literacy do not need to repeat the learning that has occurred. You do not have to re-invent the method-of-the-method of "converting research into improvised educational practice." You do not have to experience accusations at the "failure," "decline in achievement," "no effect," and "poor quality" that regrettably but inescapably accompanied the early years of learning by the educational R&D community. However, the positive benefits from educational R&D for the public schools in the future are now clear. As a result of educational R&D investment, the elementary schools are <u>now</u> in sound position to demonstrate publicly and professionally that quality education is a realizable rather than a rhetorical national commitment, while colleges and universities are still at the starting point in doing so. This benefit has not yet been felt by either the elementary schools nor the R&D community on a generally acknowledged basis, but there is every indication that it will be realized within the immediately foreseeable future. And there is also every indication that this professional advance within elementary education will have push-effects on secondary and post-secondary education.

If in the future, community colleges disregard or discount the advances that have been made in educational R&D, it seems to me you will be closing your eyes to both professional duty and public demand. But this is viewing the alternative from a negative stance. Viewed from a neutral stance, you will be losing an opportunity, and you should do so because you are following an alternative with better opportunity. Viewed from a positive stance, you have the opportunity to pick up the benefits of a decade of educational R&D investment and begin to realize its benefits with significant savings of time and cost compared to what would otherwise be necessary to achieve them.

An Actionable Perspective for R&D Investment

First, let's start with what is now known rather than what is not known. The educational R&D community now knows a good deal about the anatomy of "basic skills" of reading, writing, and mathematics. This information was acquired in the context of elementary education, but we know how to separate out that part of the anatomy which is age-grade free. That is, we can define an organized skills structure which can as easily be embodied in thematic and cosmetic accoutrements that are adult-acceptable as we have done with embodiments that are child-acceptable. This is not to state that all the information that is needed about basic skills is known, only that much is known that is now in an immediately useable form.

The anatomy of basic academic skills is not equivalent to the anatomy of functional literacy. However, it goes a long way toward constituting such an anatomy. The difference lies in embodying the skills in an everyday life context rather than a school context. The constituents of

the everyday life context have not yet been codified, but we know how to prepare such a codification and the effort entailed is modest--a few person years over a few months time.

Second, let's concede that you know what your need. I use the term "concede" advisedly because to the R&D community, it is a concession that anyone in education knows their own needs before researchers have come in and "identified the need" or "defined the problem." In making this second point explicit, I don't mean to assert that the language, views, and talk of community college and research people match immediately. But I do submit that it does not require long term, involved effort to gain a mutually understandable and acceptable statement of needs and problems that are amenable to defined R&D attack.

Third, we now have the "how to" required to integrate the instructional anatomy of functional literacy with the needs of the community of community colleges regarding functional literacy. This methodology/technology makes it possible to solve educational problems really rather rhetorically. Thus, we can now treat R&D in such matters as "functional literacy instruction in community colleges" from an investment perspective rather than a blind-faith perspective.

It is no longer necessary to field R&D in education with naive insensitivity and unabashed ignorance regarding considerations of time, scale, cost, risks, uncertainty, and projected accomplishments and anticipated benefits. It is feasible and reasonable to spell out each of these considerations in advance of the endeavor per se so that the profession as

well as the public obtains information regarding the "services to be rendered for the costs to be expended." Just as the public is now demanding such accountability, so is it reasonable for you to demand such accountability from any and all R&D endeavors preferred in your behalf.

The impression is inescapable that in the past, the modal glorified image of the nation's educational R&D is a set of glorified dissertation exercises. We now know that this is a naive image. We know that "significant impacts" demand significant time and scale. But we also know that it is neither necessary to buy the total package of effort all at once nor to delay all identifiable accomplishments and benefits until the entire planned effort has been completed.

Fourth, we know that no single individual, project, organization, or government agency can accomplish anything of significance in any part of education "by itself." On the other hand, we know that there is a short supply of educational R&D expertise. To separate R&D expertise from the lack thereof can be done very easily. Simply ask the contender: What do you expect to accomplish? How will you go about accomplishing it? How will you know when you've accomplished it? Although many people have many ideas, few who think they "could do great things if given a chance" can formulate action that gives credence to the assertion. Thus, when the chips are down, there is more likelihood that you will be underwhelmed than overwhelmed by the R&D performers that are ready, willing, and able to put expertise to the matter of functional literacy in community colleges. But in either case there are known procedures for reasonably coping with the situation.

Community colleges as a set are a finite rather than an infinite number of institutions (at least 15 times more so than public schools), and share many more common characteristics as institutions than do either school districts or four-year colleges and universities. Of course there are differences among community colleges, and these differences rather than commonalities usually command attention. But the commonalities provide the potential to concentrate R&D effort on specifics that will be applicable across institutions. This, however, requires that the R&D treat the institution rather than the individual student or the individual professor as the prime unit of concern for the inquiry. Such a stance entails a different posture than has held in the past in educational R&D. Educational R&D, like other sectors of education, has fixated concern on individual students, their differences and the environmental adaptations appropriate for various categories of differences. Thus each student, professor, and college has been a separate consideration. This "hunting and fishing society" form of operation is an anachronism societally and all but rules out any potential for accomplishments by community colleges that can be recognized and acknowledged as such by the public and the profession. Such accomplishments have not trickled out in the past from within community colleges, or in any other sector of education, and there is no reason to expect that this can or will occur in the future. New conditions and characteristics do evolve and eventuate, but these are outside of, rather than within, the informed prospective intentions of the responsible administrative leadership.

Operating within a staged time-frame, it is thoroughly feasible to generate and implement the resources and mechanisms required by community colleges to show that all of their students are functionally literate--so that if they are not so upon entry they will become so in an identifiable manner with identifiable proficiency accomplishments. If this is what you want, the educational R&D community is in position to produce it.

To be sensible, any R&D in community colleges in functional literacy will have to proceed at a considerably more rapid pace in the community than it is proceeding in high schools. As you know, such competency is in the process of being legislated in many states. Although legislating minimal competency is far different than effecting it, there is every present reason to believe that the legislative intention will be fulfilled within the foreseeable future. When this occurs, the community college concern regarding functional literacy will be much different than at present. Unless these temporal considerations are acknowledged now, the "problem" may well vanish before the "solution" has been achieved.

It seems to me that the time is ripe for sustained and continuous interaction between the nation's community colleges and its educational R&D community. This collaboration may well usefully entail matters other than functional literacy, but joint endeavor in functional literacy should aid and abet this as yet unspecified "other activity".

A researcher, by definition, never has all the answers, and I remain true to the trade in this regard. On the basis of past investment in educational R&D, however, there is presently a capability that can be exercised to produce benefits of a specifiable form and nature. Such

benefits are not free, and the R&D community cannot by itself generate them for community colleges. We stand ready, with the capability I've described to work with you to justify and conduct the common effort that is understandable and supported by the public and the profession. For community colleges to expect anything less from educational R&D will be mutually inexcusable. To expect anything more will be mutually naive. To operate within these boundaries is the business of this conference and its aftermath future.

MATHEMATICS

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Minimum competency requirements are being thrust upon secondary schools throughout the fifty states and the District of Columbia. The National Center for Educational Statistics (1) in a survey showed that performance-based educational activities were taking place in twenty-nine states as of July, 1976. Most of these states were in the planning stages, and since that time more states have begun planning.

The thrust for performance-based graduation requirements in what are termed basic skills has been brought about by widely publicized accounts of the declining Scholastic Aptitude Test scores. Among the basic skills, mathematics has occupied a prominent role, and has created nearly as much concern as basic reading skills. The term minimum mathematical skills presents many difficult problems that have not been answered. These have been the topic for some papers presented in "The Mathematics Teacher" (2), (3), and (4).

One basic question that may be asked is, what constitutes "minimum competency"? When referring to mathematical skills, we are usually interested in the skills that all adults should have in order to function effectively in the society. However, this merely broadens the question, not answers it. Similarly, "functional literacy in mathematics" raises at least two questions. Does functional literacy mean that an individual has mathematical skills restricted to basic computations? Or does it mean that the individual is capable of applying broad interpretations of mathematical principles?

As a start, let us assume that functional literacy in mathematics means that the individual has the ability to solve a reasonable simulation of a relatively simple problem related to a process involving measurement, counting or percentage. This, of course, refers to the ability of an individual to apply certain mathematical operations to solve problems where mathematics is a part of the solution.

In any setting where actual experimentation or measurement cannot be performed, the term reasonable simulation means that the problem is stated in a narrative form or data is presented as a graph or table, and the student must then decide how to utilize these data in the solution of the problem.

It should be noted, also, that in the above assumption, the individual must be able to understandably read the narrative or data, then determine what mathematical operations are involved in the actual solution. The actual mathematical principles, therefore, are only one of the necessary steps in the solution.

Students that have "mechanically" learned basic operations of addition, subtraction, division, and multiplication have very little difficulty in performing these operations. However, when these operations are but one step in the solution of a problem, and the student must set up the problem from a narrative as a preliminary, much of the difficulty begins. There are many reasons why this difficulty may arise. The student may have difficulty in understanding certain terms that culturally may be strange and totally unfamiliar. Mathematical terminology is essentially a language within a language. For example, to tell a student that multi-

plication is a commutative operation means absolutely nothing unless the student understands the terms commutative and operation.

It has been my experience that even students in the second quarter of calculus do not really understand what is meant when they are told that $\frac{d}{dx}$ is an operator. These same students have had no difficulty in using operators such as +, x, ÷, and -. They learned what to do when they saw these symbols, but were never told that they are operators. This is brought out here to illustrate that basic communication problems may be a real handicap in the interpretation of mathematical principles and their application.

The community colleges are in a very advantageous position to assist a wide spectrum of students in acquiring mathematical literacy. However, the community college, in evaluating what it can do to serve its clientele, faces some rather difficult questions. Among these are: (1) What are the goals of the community college? (2) What are the general characteristics of the students served? (3) What are the administrative problems? (4) What are faculty attitudes and training? In the following pages, let us look at each of these and related problems.

Historically, the junior college emerged in the 1890's, and at that time it was seen primarily as an adjunct to a nearby university. These colleges were carefully attempting to insure that their curriculum would emulate the university curriculum as fully as possible. The evolution of the comprehensive community college from the junior college is well documented. In the process of this evolution, a great deal of confusion has arisen relative to the concept of the two-year college. Administratively

established two-year colleges, when they were faced with the comprehensive community college concept in the 1960's, were uncertain as to what direction to go.

Rapid technological changes provided the impetus for two-year colleges to be involved in community-based education. The existing junior colleges changed their names to community college. Recognition of problems related to race, rapid changes in employment patterns, unemployment, retraining people caught in career obsolescence, poverty, etc., mandated a change in the goals and missions of these colleges to provide a comprehensive base in the development of the human resources of the community served.

Since World War II, acquisition of some college education or a college degree has gained the significance once awarded the high school diploma. With advancing technology and automation, the college trained individual enters into the category of "functional literate".

As a consequence, the two-year colleges were caught in the drive by industry, and the members of the community to increase the level of education of the people served by the college. Universities and four-year colleges were not prepared to meet the increasing numbers of students, the so-called "non-traditional" students, wishing to increase their education. This was particularly so because many of these students lacked even the most rudimentary background for the courses designed for baccalaureate degrees. Two-year colleges that were willing to become comprehensive community colleges broadened their curriculums in order to offer courses that were less than what was considered college level work. They were willing to accept what was considered the low-ability student.

A function assumed by the two-year college was to build up the basic deficiencies of students ranging from 18 to 50 years of age. The preparation of these students was to enter into a training program for some technical area.

The two-year college was in a unique position to train people in technical areas requiring less than a baccalaureate degree. Examples of these are chemical technology, mining technology, civil engineering technology, and instrument technology. These programs may be completed by students who do not have the ability or the desire to pursue the baccalaureate or graduate degree. Furthermore, advancing technology is rapidly increasing the need for technicians.

The technical training inevitably requires the student to be mathematically literate. The traditional mathematics curriculum of the university, the four-year college, and the original junior college was simply not patterned to meet this need where poorly prepared students were concerned. Many of the students entering these programs were people past 30 years of age who had not been to school since graduation from high school. Some were dropouts from junior high schools, students were not motivated in early years of schooling due to social and economic conditions. These were the students a mathematics department confronted. Consider a student that in elementary school may have been discouraged because he had a language problem. Here is a student with a double handicap. He had difficulty with English, and now he is confronted with a mathematics language problem. This same student now wished to enter into a technical area. Obviously the problem is compounded.

This leads to the problem of faculty available to meet the demands of such programs. Faculties of existing two-year colleges that desired to become comprehensive community colleges were trained along the traditional university and four-year college goals. Many of these faculty members resist the idea of teaching less than college level courses. They lack the empathy, in many instances, for the student that is educationally, socially, and economically disadvantaged. Many of these faculty members have definite beliefs and attitudes about what a college level course should be, and what qualities a college student should have. These beliefs and attitudes may very well not coincide with the level of instruction and background of students that are in the initial phases of training.

The problem confronting the administration of the community college is to seek out faculty that are in agreement and understand the goals of the college. Here the problem appears easy, but we must keep in mind that these less than college level programs generally must be absorbed by a department that is also involved in the preparation of transfer students. Students are pursuing courses leading to the baccalaureate degree in some profession. The mathematics faculty will be called upon to teach mathematics for vocational-technical students as well as mathematics for pre-engineering, chemistry, biological sciences, mathematics, and other transfer programs. The question that could be asked at this point is whether the mathematics for vocational-technical, and baccalaureate programs differ to such an extent that this could create problems. There is no simple answer to this query. Some would probably feel that the difference is quite significant, while others will feel that the difference is of no consequence. Other questions that confront the department chairman,

the dean of instruction, and the faculty in reviewing curriculum are, "Can the mathematics department provide simultaneously a college-transfer program of high quality and a vocational-technical program?, How does the mathematics curriculum really differ from a college-transfer program and the vocational-technical program?, Where and how does the less than college level mathematics program fit into the department?

A distinction must be made clear at this point. There is indeed a difference between the remedial mathematics, the vocational-technical, and the transfer program. I would certainly be inclined to state the largest difference exists between the remedial and the other two programs. The remedial program, in many instances, deals with very elementary concepts. In many cases where ethnic minorities are involved, there may be problems of language. For example, I have taught classes where some Navajos were enrolled. These students were struggling with English. Before one undertakes to explain some very elementary arithmetic operations, one must bridge the language barrier. Development of these students to the point where they may enter with confidence into a career choice utilizing mathematics requires a great deal of instructor time, patience, and counseling. Until the college administration and faculty are willing to commit time, space, and money to such a program, they will only be "conning" the student and the community about an "open door" policy.

The diversity of curriculum, teaching methods and students in a remedial program requires a considerable effort in development of materials. These programs may be costly, and administrators must be willing to defend before the legislative and governing bodies of the college, the rationale for funding. In-service training of faculty is essential to prepare the

necessary teaching personnel, and to demonstrate the real service the community college can give the community it serves. A good counseling system is indispensable. Public relations with local industry and organizations is essential.

Now that we have looked briefly into the character of the students, goals, administration, and faculty of the community college, let us direct our attention to the question of functional mathematical literacy, and how the community college may be involved.

At the beginning of this paper, it was assumed that functional mathematical literacy meant that an individual has the ability to solve a simulated problem given in narrative, table, or graphical form related to some process. It will be further assumed that functional literacy in mathematic relates to the application of mathematical principles and operations to some career choice, e.g., machinist, business, chemical technician, engineering technician, etc.

Mathematics taught to a student with very little understanding of even such basic operations as division, multiplication, use of fractions, etc., is the very beginning of the road leading to functional mathematical literacy. There are many of these students attracted by the "open-door" policy of the community college. To get these students started requires excellent counseling and diagnostic testing to determine where the student is at in his mathematical comprehension. These students, in many cases, have developed a fear of mathematics. They have been led to believe that to learn mathematics requires a special gift from the creator, or they were non-motivated for myriad of reasons.

The methods used in approaching the above mentioned students can and should be tailored to the instructor and the student needs. However, certain very basic principles do apply. In so many cases, the chasm that exists between instructor and student is communication. Elementary definitions and theorems are totally misunderstood because of lack of understanding of one or two words. For example, many times a student gets side tracked in learning the definitions of the trigonometric functions because he wants to know what the word sine means, even though the definition states what the sine of the angle means.

Another basic principle, I believe, in motivating the student to acquire the necessary skills in the application of mathematics, is to make the principles relevant to some type of problem to which the student can see an application. As the student progresses, the most difficult hurdle appears that of being able to finally relate basic mathematics principles to a narrative, what once was called the "story-problem". It is here that relevance becomes quite significant.

The goal of remedial programs should certainly be more far-reaching than to give the student the ability of applying rudimentary operations. It should prepare the student to finally enter into some career of his choice in which mathematics is required. When that student is capable of relating mathematical skills to the solution of problems in the study of other subjects, that is what I would consider as functional mathematical literacy.

In conclusion, let us consider some questions that confront administrators, governing boards, faculty, and the community relative to the role

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of the community college and functional literacy in mathematics.

1. Should the community college indeed have the "open door" policy and commit part of its budget to train individuals with limited academic ability or inadequate preparation?
2. Should the community college attempt to develop comprehensive programs to meet the needs of industry in the training of technicians?
3. Can the community college simultaneously maintain status of transfer programs and high quality vocational-technical programs while at the same time incorporate remedial type programs?
4. How can the community college adopt programs to meet wide differences in age, motivation, and preparation of the students it serves?
5. How does the community college interface its distinctive role and programs with secondary schools in meeting the needs of students that are not motivated or desire skill types of training?
6. Is adequate financial support possible to insure quality programs ranging from remedial to transfer programs in mathematics?
7. What special characteristics and training are required for mathematics teachers in the community college? Remembering that the faculty members must cover a fairly wide spectrum of mathematics, from basic arithmetic to differential equations?